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An Address.[1]

THINGS THAT MATTER.

By EUSTACE RUSSELL, M.B., B.S. (Edinburgh),
Retiring President of the Queensland Branch of the British Medical Association.

I HAVE very great pleasure in addressing myself to you as the retiring President of the Queensland Branch of the British Medical Association.

The past year has been a very strenuous one and in a great many respects I am told by those of far greater experience than myself that there has never been in the history of the Branch a more arduous or more trying year. There has been presented to myself and to my colleagues on the Council of the Branch a very great variety of problems, some really serious and some more or less trivial, and the solution of these has taken a considerable amount of time and not seldom a little anxiety.

It was said to me the other day that the Council had wasted a lot of its time on matters of no importance and I am taking for my text tonight the subject of "Things That Really Matter."

The average member of the Branch does not appreciate the care and trouble that are taken by the members of the Council to reach finality in the various differences presented to them and it would be a very good thing for the Branch if those so active in their criticisms had some measure of appreciation of the work done for them by their colleagues and of the thought, knowledge and experience that are used on their behalf. It does appear, however, that those who are most persistent in their destructive criticism are of no constructive value to the Association and most of their efforts are directed to the condemnation of their leaders at cabalistic conferences and at the congregation of cliques. It would be far better to have the various matters at issue decided at open meetings and it has to be stressed that every opportunity has been given for speakers at meetings to express their views.

The proper training of the medical practitioner must include the capacity for saying, when called upon, a few connected and sensible sentences and the only way the individual can be trained is by constant effort at meetings. And this means that he becomes very soon able to express himself clearly and in good language, to his own advantage and to the delectation of his hearers. And more than that, it is not understood that the affairs of an association such as ours are difficult to grasp and the only way that a proper perspective is obtained is by long experience and constant attendance.

The year past has been, despite difficulties, a most successful one and the most pleasing feature has been the cohesion of members when urgencies have arisen.

[1] Read at the Annual Meeting of the Queensland Branch of the British Medical Association on December 14, 1928.

The Lodge Question.

The lodge question has been perhaps the most serious problem which the Branch has had to face and this happily appears to be very near solution. It has been fortunate that the members kept a united front, a fact recognized by ourselves and by those who assailed us. It was also recognized by those who availed themselves of the service of contract practice, that they were getting a fair deal from the British Medical Association members and the fact that practically 33% of the lodge members joined up with the Friendly Societies Medical and Hospital Council is an indication of what the rank and file of the friendly societies thought of their medical service. And it would seem that in a few weeks the whole of those who were served by the British Medical Association doctors, will have joined up and probably more.

The bringing into force of the Federal Model Lodge Agreement in the metropolitan area was a difficult matter and caused a deal of very well organized opposition, but it was worth the trouble and marks a step in the right direction. It has to be remembered that what is practically the same agreement has been in force in Queensland for some years and that where such was the case there was no difficulty and no friction. So far the metropolitan area only is affected, but already the lodge question are arising in the country districts and it is very desirable that there should be some uniform basis of agreement between the doctor and the lodges he serves.

There have been before the Council in the last month or two several quite serious issues and of these two at least deserve notice.

City Medical Officer of Health.

The first was the dismissal of the City Medical Officer of Health. It can be said at the outset that the most important function of the profession is to prevent disease and the next most important is the relief or cure of it and there has evolved two distinct branches of medicine, the preventive and curative. The abolition of the office of City Medical Officer of Health raised in the minds of all thinking citizens and particularly in those of the medical men a very serious and urgent problem. It was deemed so serious that the Council of the Branch in company with others waited on the Mayor as a deputation in order to discuss the matter. The idea seemed to be that the State Medical Service would take over the functions of the city and that the rights to protect the health of the citizens would be waived to the Health Department of the State.

Quite apart from the stupidity of substituting lay inspectors for the qualified medical officer it is certain that there is no more important function for a city father to perform than the conservation of the health of his children and to throw away their birthright merely, as it appeared, to get rid of an individual officer appeared to be little short of a crime. This Branch was not concerned nor is it concerned with the question of the right of dismissal of City Council employees and it is recog-

nized that the City Council could get rid of an officer in a proper way if it so wished. At present the work is being done by a part-time medical officer, which is better than having none. At the same time it should be maintained that no office in a large city such as Brisbane, including that of the Mayor, is of greater importance to the people than that of City Medical Officer and the occupant of that post should be a highly qualified and specially trained man and adequately remunerated.

The Honorary System.

The second matter is the unjustifiable and unnecessary attack that has been made on us as a profession in the report of a meeting of the Brisbane and South Coast Hospitals Board, published recently. It is alleged or suggested that the honorary system has failed and in that statement is the imputation that those responsible for the honorary work are failures. There has been for some time an uncomfortable feeling in the minds of those on the staffs of the hospitals under the control of the Brisbane and South Coast Hospitals Board that an attempt would be made to establish a system which would place them under the control absolutely of a lay authority. It has to be remembered that the recommendations for appointments under this Board are made by a board of medical officers and these are elected annually by their colleagues, so that it is quite obvious that the appointments are made after recommendation by men who are capable by their training, experience and personal touch to gauge the fitness of the applicants for the positions. And it could be very easily shown that the efficiency of the hospitals, the volume and importance of the work done in the last few years have increased tremendously, this being due largely to the fact that most of the best men available for honorary positions are employed on the staffs of the hospitals.

One very regrettable incident arising out of this attack on the honorary staff has been the investigation of complaints made against the members of the staffs and the publication in the press of an incomplete report of the result of these investigations. The position at present is unfair and intolerable and an effort will have to be made to clarify the situation and it is an urgent matter not merely from the point of view of the profession, but what is really more important from the aspect of the public. I fear that the general run of the profession has no or very little idea of the work that is done for them by the staffs of the public hospitals and the opinion of the public is moulded by the not very fair criticisms which are published in the lay press. It has been the endeavour of those who are most directly interested, to have the best men available for the various posts on the staffs of the hospitals and from the applicants those men best fitted for the jobs have been chosen regardless of any outside influence.

I have tried to analyse the various matters and to find a reason for this attack on the *bona fides* of the honorary systems. It is difficult to explain and we have the assurance of the Home Secretary that he at any rate has no intention of abolishing the honorary system. The personal factor has undubtedly obtruded itself in the discussions that have resulted from the issues raised and sadly enough it has further complicated the issue and has brought into the arguments an acrimony and heat which have added to the difficulties.

The really important matter that comes out of the question is: Are the sick poor going to be any better off under a different *régime*?

It has been the privilege of the medical profession for ages to give its best and to give its best freely for the benefit of the indigent sick and that idea has stood the test of time here in Australia and in Great Britain and in the only other large metropolitan hospital in this city there is neither difficulty nor friction. It does not appear from that as if the medical staffs were at fault.

A further real difficulty under another system would be the inability of the hospital authorities to get the best available specialists in the various branches of medicine and surgery for the various departments. It is quite true that some sort of arrangement could be devised whereby one or perhaps more specialists could be employed in part-time work in the various hospitals, but this would not mean necessarily that the best men would occupy the posts and further that some of the men with the best qualifications for the posts would not be employed in hospital work which would be a bad thing for doctor and patient.

I do not think it is realized that the work in a public hospital includes the training of the younger members of the profession which is one of the paramount duties of the honorary staff and from the point of view of the public weal this is a real necessity. It might be thought that in a city such as this where the academic atmosphere is lacking, the training of the resident medical officer does not amount to very much, but I know from experience and from what I hear from my past residents, quite apart from the experience of my colleagues, that the experience the young doctor gains as resident medical officer is not merely valuable but invaluable. I have mentioned the academic atmosphere and again the training of medical students, when a medical school is established in this State, is a matter that has to be thought of and considered very seriously. I do not doubt if I read the signs aright that the establishment of a school here is a matter of a very short time and judging from the keenness of the members of the post-graduate course, the time is very nearly ripe for the consummation of the ideal.

The post-graduate course this year was a signal success and marked a distinct advance in medical thought in the State. The Branch owes a very deep debt of gratitude to those who travelled long distances and gave their skill and learning to insure its success.

We have here already the nucleus of a very efficient school of medicine and it would take very little more machinery to place the complete curriculum on a proper basis with every possibility of

success. The Anatomy Department, recently established, has done excellent work and has been supported with enthusiasm; those who have inspected it, have had nothing but praise for the manner in which it is conducted. Other departments are already in being and it is no secret that a great many members of the University staff would welcome the initiation of a school. It would take very little more to get a complete organization for the fulfilment of the dream and there are amongst us men who are willing and capable to see the business to a successful issue.

These are matters which arise from the present juncture, and it has to be remembered that quite apart from the extra expense which the public purse would have to bear, it is certain that the efficiency of the hospitals would lessen and there would disappear the personal factor in the work and the public and the profession would be the worse off. The important question of service of the State and the community arises out of the present difficulty and the training of junior medical officers and in the future of medical students has also to be considered. And after all the former depends upon the latter, as the efficiency of the service to the public depends upon the early training of junior members of the profession. It would be little short of a tragedy if the control of the hospitals should fall into the hands of those who were not ambitious enough to move with the times nor capable enough to widen their horizon. The fact that the hospital appointments are eagerly sought after by the best of the profession is sufficient earnest that the profession is anxious to excel in its art and any cramping of that desire must reflect itself not only in the work of the profession as a whole but in the results of their work—a fact that the denizens of this State probably realize now or would very soon have thrust upon them.

It seems that it is unlikely that responsible people will hardly listen to amateur opinion when they are charged with the guardianship of the public health and that they will eventually give ear to the words of those who are specially trained in their profession. The question of hospital administration and control is one of great gravity and has had serious consideration during the past year and good work has been done in this by the Council, but it is more than a medical question and really deserves the attention of every thinking member of the community.

Other activities of the profession this year deserve more than a passing mention.

Aerial Medical Service.

One of the many benefits conferred on the people of this State and with which our profession is closely allied has been the establishment of an aerial medical service by the Australian Inland Mission. This marks a very important step in medical and aerial progress and it is destined to become an important branch of the profession.

It has to be understood that the "Flying Doctor" does not compete or interfere with other doctors or their work, but his activities are confined to those cases in which he is really needed and no other service is available. The Australian Inland Mission is to be congratulated on its enterprise and I feel sure that the work done will more than justify the experiment and will stimulate what is a most necessary and deserving work.

Ante-Natal Clinics.

Another development which marks an advance in medical activity and thought here is the establishment of ante-natal clinics at the Lady Bowen Hospital and this clinic has advanced to a position of importance in the economy of the community. This activity has been stimulated by the visit during the last twelve months of two distinguished gynæcologists, Professor Windeyer, of Sydney, and Mr. Victor Bonney, of London, and the excellence of the work done reflects the greatest credit on the members of the staff and augurs well for the future.

The work of the ante-natal clinic was very considerably assisted by the presence, advice and constructive criticism of these visitors and I believe that the report which Professor Windeyer furnished at my request, will have the effect of causing to be established further improvements in the near future. There is one outstanding unsatisfactory feature revealed at the ante-natal clinics and that is lack of consideration given to some of the prospective mothers who are not married. It is generally recognized that the married mother deserves and should have every care and attention, but society dictates that in some cases the unmarried mother should have scant ceremony and little thought. It seems particularly to be so in the case of some of the homes who elect to care for these unfortunate people, and it should be insisted that the inmates of these homes should have at least a decent chance of ante-natal treatment if nothing more.

I make this suggestion not in any way as against the principle of sustaining the homes, but in the hope that some good will come of it. The statistical figures I have seen, are very much more eloquent of a need for action than anything I could say or write.

The Cancer Campaign.

We have had the pleasure of welcoming amongst us a distinguished colleague in the person of His Excellency the Governor and not the least of the public benefits His Excellency has furthered has been the Queensland Cancer Campaign.

I mentioned in my opening address to the public at the inaugural meeting in the Albert Hall that we lagged seriously behind other countries in the treatment of cancer and that the campaign against cancer in this State had the whole-hearted support of the profession here. The result of the appeal shows that not only the members of our profession are alive to the needs of the occasion, but that the people realize the patent necessity of a coordinated fight and our colleagues have reason to be proud of the results of their efforts. It will mean at least a very great advance in the diagnosis of the various

cancerous conditions on account of the increased interest in the disease and the possible relief from suffering, the saving of lives and the increase in the public security cannot be calculated.

A very big debt of gratitude is due to the Commonwealth Government for the foresight and humanitarian move in its purchase of a large amount of radium and a considerable portion of that debt can be put to the credit of the medical members of the Cabinet now in office. It is sincerely to be hoped that the honest optimism of those associated with the campaign will be abundantly realized.

National Insurance.

A matter that has engaged the serious and careful attention of the Branch and of medical men throughout Australia has been the introduction of the National Insurance Scheme. This seems to be on a sound and a reasonably equitable basis, but it requires, like all innovations, very careful scrutiny. On the whole, judged from the standpoint of the beneficiary and from the standpoint of the doctor, the scheme deserves commendation and one or two suggestions we have made, have received careful and favourable consideration. It has to be borne in mind that arising out of this measure there comes the wider and more comprehensive measure of medical benefit and the developments in the future have to be carefully and critically watched.

It is fortunate that Australia will have the experience of the National Insurance Scheme of Britain to guide her and it is hoped that the pitfalls in that scheme will be avoided.

The Subcommittee of the Branch has been alive to the necessity of weighing the evidence and a close inspection of all the possibilities in the light of local conditions and very little can be added to the work that its members have already done.

Benevolent Fund.

It has been suggested and the suggestion has been acted upon, that there should be established in this State a benevolent fund organized and administered much on the same lines as those in other Branches. It is hoped that all the necessary particulars will be available early in the next year and the fund will become permanently established.

Ministry of Health.

I have stated in an earlier part of this address that the health of the community is paramount and that the consideration of the health of the people is of the first possible importance.

The Council of this Branch has seriously discussed the possibility of the establishment of a Ministry of Health by the State Government and the matter has been furthered by an approach by the Council to the Ministers of the State Government. I believe that the members of the Ministry are sympathetic to the idea and it is possible that such a portfolio may be the outcome of our representation and I do not doubt that such a step would meet with the unequivocal approval not only of ourselves as a profession but of every citizen with the capacity of thinking for himself. It has to be remembered that this is no new idea and the present Government has already had the matter in mind and seriously discussed it and it is to be hoped that the difficulties now in the way will be surmounted.

Clinical Assistants.

One of the notable advancements in the year has been the appointment at the hospitals under the Brisbane and South Coast Hospitals Board of clinical assistantships at the various hospitals. It is recognized that there are a great many practitioners who are interested in their work beyond the scope of their ordinary routine in general practice and the establishment of clinical assistantships was regarded as a step in the direction of giving these practitioners who had no opportunity of regular hospital work, an opening for the development of their particular bent in their profession. There is, of course, always a limited supply of specialists in a place such as this for the work that is to be done in public hospitals, and it is very necessary to try to encourage those who wish to improve their ideas and technique as far as possible to fulfil that demand.

Other Matters.

There are many other questions on which I could discourse as affecting us as a profession, and matters that really affect us closely.

For example, it would be interesting to trace the development and usefulness of the baby clinics, the *Crèche* and *Kindergarten* Association and other kindred activities, the importance of child welfare movements generally and the considerable added importance in recent years of the play movement.

It is interesting to place on record that psychological medicine is finding a place not merely amongst the private practitioners, but is being recognized seriously by the hospital authorities and a very determined effort had been made during the past year to improve the conditions of treatment of mental defectives.

The question of the establishment of intermediate hospitals has been well debated and there seems to be a reasonable prospect of the establishment of such an institution as part of the present hospital scheme and if it is accomplished it will serve a very useful purpose.

It is possible that the settlement of the lodge dispute will hasten the furtherance of this objective, as the lodge officials are anxious to give their members efficient hospital treatment at a reasonable cost. The use of health visitors and a follow-up department have been suggested as arising from ordinary hospital work and it is quite possible that a properly organized scheme of outdoor medical work might be undertaken much on the lines of the old established dispensaries in order to relieve the very serious overcrowding that takes place at the Brisbane Hospital.

Conclusion.

In conclusion there seems to be no room for doubt in the minds of the members of the profession that

serious problems are to be faced. The various matters I have touched upon by no means complete the list of the activities and responsibilities of our members and it is the duty of every member to give his best to whatever particular work he is associated.

It is to be hoped that the next year will be less difficult than the one just past and that before long most of the problems awaiting solution will be solved.

A SERIES OF FRACTURES OF THE LONG BONES TREATED BY THE METHODS OF R. HAMILTON RUSSELL.[1]

By C. CRAIG, M.D.,
Surgeon-Superintendent, Public Hospital, Launceston.

YOU all remember the very great interest that was created in this State by the exposition of the treatment of fractures that was given by Mr. Hamilton Russell during his visit in 1926. With a view of putting to the test the very unusual opinions that he expressed, a series of one hundred and fourteen fractures of the long bones has been treated according to the principles that he enunciated.

The teaching of Mr. Russell differs from that generally accepted in two important particulars: (i) As regards the action of muscles on fragments, (ii) as regards the position of the broken bone ends.

THE ACTION OF MUSCLES ON BROKEN FRAGMENTS.

The standard opinion in regard to the action of muscles on fragments is that when a fracture separates a muscle group from its opponents, the muscle group attached to the proximal fragment will gradually retract and the distal fragment must be placed in a position which will coincide with that into which the other fragment has been drawn. Take, for instance, "A Manual of Surgery" by Rose and Carless. In the introductory chapter on fractures there is the following statement:

> The deformity is due to three main factors, *viz.*, the causative violence, the action of gravity and the pull of muscles.

A great deal of stress is laid on this last factor, the pull of muscles, and in each section on particular fractures there is a paragraph headed "Displacement" in which is described the attachment of the muscles to the broken bone and the manner in which they pull the fragments in different directions.

This idea as to the action of muscles on fragments is one that is repeated in most text books and indeed is one that has dominated in the teaching of the treatment of fractures for a very long while. To this attitude Mr. Russell takes up a directly opposite stand. He stated to us that if the contour of the limb were restored and the limb placed in a position of physiological rest, the action of muscles as a deforming force could be ignored.

> Muscles are the creatures of habit and the slaves of custom. In a broken limb every muscle and muscle fibre will co-operate in the endeavour to preserve the position to which it has always been habituated, and the last thing a muscle will do will be to abuse its liberty by displacing a fragment into an unnatural and unaccustomed position.(1)

Here then are two widely differing views, only one of which can be right. A decision between them involves not only a study of fractures, but of other injuries and diseases involving muscle and, further, a study of experimental work on muscle action.

Those who adopt the first principle, certainly seem to have a good deal to support their view. There is abundant evidence that, when a muscle group is separated from its opponent, after a certain period has passed, it is to be found in a retracted state. It is usual to point to such instances as the result of the accidental cutting of tendons, to the contractions of poliomyelitis and indeed photographs of fractures may be produced which show the appropriate displacement of the proximal fragment. It must be admitted, however, that no very clear idea has been given as to how this retraction occurs. It is variously stated that the contraction is due to:

(*a*) The fact that muscle is on the stretch and behaves as an elastic band.
(*b*) Muscle tonus.
(*c*) In the case of fractures the influence of some new and abnormal reflex.

These must be examined separately.

Muscle as an Elastic Band.

There is no real evidence that muscle in a state of rest acts as an elastic band.

I would very respectfully differ from Mr. Russell in this respect when in one article(2) he likens muscles to elastic bands slightly on the stretch. This view is not borne out by clinical evidence. Take for instance tenotomy of the *tendo Achillis*. If the tenotomy is done without active dorsiflexion of the foot, the tendon does not fly up as it would were it behaving as an elastic band. Take also the accidental cutting of tendons. A case recently occurred where the *flexor pollicis longus* was cut close to its insertion. Three observations were made in this case. With the hand in the position of rest, that is to say, with the wrist neither flexed nor extended, with the thumb close to the fingers and with its distal phalanx slightly flexed, the end of the tendon was found at a distance of about 3·1 centimetres (one and a quarter inches) from the distal end. When the tendon was seized, it was pulled out with a very small amount of force and, once pulled out and let go, it did not again retract. Obviously, then, what retraction there was was not due to the elasticity of muscle. As another instance of the non-elasticity of muscle, when the distal phalanx of the thumb was passively flexed, it remained flexed and was not pulled straight by the *extensor pollicis longus*.

[1] Read at a meeting of the Northern Division of the Tasmanian Branch of the British Medical Association on June 7, 1928.

If the retraction of 3·1 centimetres (one and a quarter inches) was not due to the elasticity of muscles, some explanation must be given of it. At the time of injury there must have been a violent contraction of all the arm muscles away from the injuring force and it may be safely assumed that the cut tendon, sharing in this contraction, flew up the arm for a distance of more than 3·1 centimetres. After contraction, it relaxed again, but did not go out to its full length, apparently for the simple reason that muscle in relaxation needs the application of some slight force to draw it out to its full length. How much this force is could only be determined experimentally, but at the operation when the tendon was grasped with artery forceps, only the very slightest traction was needed. If this be so, it would be necessary to explain further why in cases of cut tendons that have remained untreated for some time, the muscle is found in a very retracted position and is very difficult to draw out. The explanation of this is probably connected with the fact that once a muscle has been allowed to remain for some time at one length, it tends to assume that length as its maximum. So that after the first contraction and relaxation the muscle is left at a shortened length which it gradually assumes as its maximum. Were the muscle the subject of no more contractions, it would remain at this length, but it must be the subject of many contractions. After each one of these contractions it will fail, owing to the lack of a pulling out force, to return to quite its former position. Thus, owing to a series of contractions, it will become gradually shorter.

This explanation probably applies also to neglected cases of poliomyelitis. Intermittent contractions of the unaffected muscles take place after which the muscles are never pulled out to their original length. After each contraction and relaxation the muscle assumes as maximum the length in which it is left, with the result that the deformity becomes more and more marked.

If, however, the patient is seen immediately after the paralysis has occurred, there is then no tendency to retraction on the part of the unaffected group and if the limb is properly splinted, no deformity is ever seen.

If this explanation of the retraction of unopposed muscle groups be a true one, it will have an important bearing on certain types of fractures.

The Action of Muscle Tonus.

It is assumed that all muscles are in a state of tone and that the tendency of this tone is to cause a gradual yet powerful contraction of muscles. This question of muscle tone is so difficult and complicated that it is necessary to consult some great authority on the subject. An exceedingly clear exposition of muscle tonus is given by Sherrington in his article, "Postural Activity of Nerve and Muscle."[4]

The view that muscle in a state of tone is constantly though gradually tending to contract, is one that is not borne out by Sherrington's researches.

Sherrington came to the conclusion that muscle had two properties, one that of altering position, the other that of maintaining the altered position. When a muscle is maintaining an altered position, it is exhibiting tonus. He came to the conclusion that this property of exhibiting tonus was mainly possessed by those muscles which maintained posture.

> Posture may be passive or active. The former, for instance, the postures of a dead body impressed on it by gravity, etc., are, of course, outside this enquiry. Active posture largely compasses the counteraction of those effects which gravitation, etc., produce in the dead body. Active postures may be described as those reactions in which the configuration of the body and of its parts is, in spite of forces tending to disturb them, preserved by the activity of contractile tissues, these tissues then functioning statically. The rôle of muscle as an executant of movements is so striking that its office in preventing movement and displacement is somewhat overlooked. When a movement, whether active or passive, has brought about a change in the configuration of a limb, *e.g.*, by flexing one of its joints, an important function of the musculature may be to maintain the new configuration, the posture. In doing this the muscle prevents movement, not makes it; it then acts statically and, though in a state of contraction, does no mechanical work whether the tension it develops in thus maintaining its and the limb's new configuration be great or small.

It has been suggested that muscle is made up of two different sorts of fibres, one to produce contraction, the other to maintain contraction. In certain invertebrates there are even two separate muscles, one to produce the movement, the other to maintain the altered position.

> In the bivalved molluscs an elastic ligament opens the shell, but muscles shut it. Of these latter there are combined for the purpose two kinds, the one of striped fibres, the other of unstriped. The former are those which produce the closing movement, the latter those which retain the posture of the shell at any degree of closure complete or incomplete to which the former muscle has moved it. . . . . With the intact Pecten, if a penholder, put between the open lips of the shell, touches the soft parts within, the shell valves close upon the intruder and hold it tight. The wooden holder is so tightly gripped that it can be extracted only with difficulty, but that done the shell valves remain at the same degree of partial closure, they do not close further.

The important point is that muscle which is exhibiting tone, is not actively contracting; its function is maintenance and not alteration of position. This matter of muscle tonus is one of supreme importance in fractures and will be referred to again a little later.

The Influence of New and Abnormal Reflex that Arises After a Fracture.

There is plenty of clinical evidence that the limbs are provided with the mechanism for a new and abnormal reflex action. Take the case of an acutely inflamed joint, for example, the knee joint. In such a case the knee is forcibly held in the position of flexion by the powerful action of the surrounding muscles. That this reflex is different to the ordinary postural reflex is shown by the fact that, whereas postural activity may be maintained for long periods with no fatigue, in this class of reflex

there is great fatigue. In spite of this the muscles cannot be relaxed and soon in addition to the pain of the inflammation, the patient has to bear the aching of those contracted muscles. Further than this, in postural activity there is very little energy used, whereas in this joint reflex there must be a very great energy transformation, which is seen clinically in the rapid wasting of muscles.

It is very interesting to note that under certain experimental conditions Sherrington was able to reproduce a reflex very like the above.

Of more interest is the fact that when the reflex postural contraction is very powerful, it seems to pass over into the full sthenic reflex action which can be produced by ordinary artificial stimulation of an afferent nerve appropriate for reflexly exciting the muscle. . . . In so far then the postural contraction seems when very intense to pass over into and become indistinguishable in this respect from ordinary reflex contraction such as occurs in movement reflexes, etc.

It might be argued that here, then, is a reflex which, if it were exhibited after a fracture, might well produce deformity. The answer to this is not that such a reflex does not occur, but that it does not last long. As a matter of fact, when a limb is seen immediately after a fracture, all the muscles are violently contracted and the limb is consequently deformed. If, however, the patient is put at rest, made comfortable, the pain relieved and some steady force brought to bear on the deformed bones, manual, mechanical or of gravity, the muscles gradually relax and the contour of the limb can gradually be restored.

A patient was brought into hospital with a fracture of the humerus below the insertion of the deltoid. The upper fragment was abducted away from the body, the patient at the same time holding up the loose lower fragment so that it would not drag on the site of fracture. The patient was sat by the fire, the forearm was bent gently to a right angle and supported by a sling round the neck. He was forbidden to touch the broken arm. Within an hour gravity had reduced the fracture and all that remained to be done was to bandage the arm gently to the side.

Another patient was brought in with a fracture of the upper third of the thigh. There was great deformity, the upper fragment being flexed and abducted. As he was needed elsewhere, the resident medical officer hastily put the limb up in the Hamilton Russell extension apparatus and left it without attempting to reduce the deformity. He came back in a few hours time and found that the fracture was reduced and the contour of the limb excellent.

We have seen such examples as these not once or twice, but very often, so that it may be definitely stated that after a fracture there is no such enduring reflex action as obtains in the case of an acutely inflamed joint.

In so far then as all this bears on fractures, it would seem to show that deformity cannot be due to the action of muscle as an elastic band, to the presence of tonus in muscle or to the influence of any abnormal reflex. It is possible, however, that the deformity due to the initial violent contraction of muscles may remain if the fracture is in such a situation that there cannot be applied to the proximal fragment that slight force that is necessary to draw the muscles out to their full length again. It may be said at once that such fractures are very unusual. The necessary force can in the great majority of places be readily supplied by the action of gravity, or by the pressure of soft parts or by apparatus. There are only two situations in the long bones where such a force cannot be readily applied. These are certain fractures round the head of the humerus and complete fractures of the olecranon process of the ulna. These will be discussed later.

It is time now to turn to an examination of Mr. Russell's contentions. When Mr. Russell says that muscles cannot deform broken limbs, he means that they will not do so under certain conditions and these conditions are that the limbs be placed in the attitudes of rest. You remember he told us that when he was studying fractures, he noticed that limbs at rest fell into certain attitudes and that these positions were in many cases different to the positions which had been adopted as standard for the treatment of fractures. It struck him that in cases in which a bad result was ascribed to the abnormal action of muscles, the abnormal action might have been due to the fact that the muscles had been asked to assume an attitude that was in the circumstances unnatural.

Consequently he adopted a method of treating fractures with the limb in the position of rest. He claims that with the limb in this attitude the muscles are in a position to which they are accustomed, and consequently that they will do nothing to change it.

This is his theory. It is one which from the physiological point of view is peculiarly satisfying, as will be seen by a further study of Sherrington's researches on muscle tone. Sherrington was able to show that the reflex which maintains the tonus of the muscle, is played upon and affected by a great number of influences. It is influenced by the condition of the antagonistic group, by the position of the whole limb, by the position of the head and of the neck and of the whole body. In short the reflex is a proprioceptive one.

The postural action of muscles and nerves is a main outcome of the functioning of the proprioceptive part of the nervous system, at least it is so as regards the skeletal musculature, perhaps as regards the visceral and vascular musculature also. Reflex maintenance and adjustment of posture is a chief portion of the reflex work of the proprioceptive system, just as sensation of and perception of posture is a chief portion of the psychical output of that system.

Mr. Russell's theory fits in admirably with this conception. When the body is in any one posture, every muscle is automatically adjusted to that posture, has the position and length appropriate to it and exhibits the tonus which is necessary for its maintenance. If after a fracture some external skeleton is substituted for the broken bones and the limb is put in what might be called a "postural

position," it is reasonable to suppose that each muscle in the limb will assume the position that is appropriate to that particular posture for the reason that it is being told to do so by the complex of messages that makes up the proprioceptive reflex and for the further reason that it has obeyed the impulses of this reflex some millions of times before. "Muscles are the creatures of habit and the slaves of custom."

It will be necessary to examine in more detail the postural position of the upper and lower limbs. Fractures of the upper limb are usually treated with the body in the erect attitude. As regards the upper arm in this attitude, there is undoubtedly but one standard posture, which is with the arm hanging loosely by the side. There seems to be no normal postural reflex that can maintain it in any position against gravity. If, for instance, it be abducted, it soon tires and has to be dropped. It is evident that to maintain the abducted position the body has used the same kind of contraction that was used to move the limb into this position. The characteristic of this kind of contraction is that it is easily fatigued.

The forearm, however, comes into a different category. Its most usual attitude is hanging freely down by the side. In this position it is slightly flexed in regard to the upper arm and is either halfway between supination and pronation or else inclines more to pronation. There is, however, a postural reflex which enables the forearm to be maintained against gravity in a more fully flexed attitude without fatigue. Take, for instance, the case of a person who is standing reading from a book. This attitude can be maintained without fatigue for quite long periods.

It is quite beside the point, but it is interesting to note that, although the upper arm cannot normally bring into action a reflex that will maintain it for long in any position against gravity, it is nevertheless supplied with such a mechanism. This is seen in the curious condition known as catalepsy. For instance, if the arm be extended above the head in this condition, it remains in that position. The possession of this mechanism is no doubt a relic of the time when the forearm was the foreleg and had to maintain the body upright against gravity.

When the thigh or leg is fractured, it is necessary to place the patient in the lying down attitude on his back. Now Sherrington's researches were mainly concerned with the body in the erect attitude. Nevertheless, when a person is lying on his back, his lower limbs still exhibit postural tone; they do not take up the attitude of a newly dead body which would be dictated by gravity alone. The lying down posture differs from the standing posture in several important points. In the standing posture the knee joint is kept extended. When a person is lying down, he tends to flex his knees more or less. In the standing position the foot is at right angles to the leg. When the subject is lying down, it is allowed to drop over the right angle. In both positions, in most people at all events, the feet turn out slightly, so that they form with each other an acute angle. This turn out is more obvious in the lying down than in the standing position.

Although the postural positions of the upper and lower limbs have these certain broad characteristics, it is obvious that with such mobile limbs as the leg and arm there may be many positions of rest. Mr. Russell as the result of his experience has selected for each limb a position of rest that is specially suitable for the treatment of fractures. In the upper limb the arm hangs loosely by the side; the forearm is bent to a right angle and brought across the front of the body where it is supported by a sling from the wrist round the neck; it is halfway between supination and pronation. The wrist is neither flexed nor extended and the fingers are slightly flexed. All fractures from the sterno-clavicular junction to the wrist are treated with the arm in this position.

In the lower limb the knee is slightly flexed, the foot drops just over the right angle and the whole leg turns slightly outwards. All fractures from the greater trochanter of the femur to the ankle joint are treated in this position. Fractures of the neck of the femur have been excepted, as Mr. Russell has lately decided that they are best not treated in this attitude.

These positions are not meant to be hard and fast. It frequently happens that a fracture falls more readily into place in one particular position of the limb. For instance, a fracture of the humerus frequently sets better with the forearm dropped below the right angles. In these circumstances this position should, of course, be the one adopted.

A corollary of Mr. Russell's theory is that if a fractured limb is put in any position other than one which is postural, difficulty may be encountered from the fact that, although the distal fragment is easily controlled, the less easily controlled proximal fragment may try to assume its natural position. It will be seen that this is the exact reverse of what is usually taught.

It may be well to point out here that there are certain positions which are frequently used for the treatment of fractures which are strictly non-postural, that is to say, they are not postures which the proprioceptive system would choose for itself were it allowed to do so. If the patient were erect, any position with the upper arm away from the body would be non-postural. In the erect attitude the proprioceptive system requires the arm to be by the side. The position of full extension of the elbow is non-postural in any attitude of the body and so is the position of full supination of the forearm. In regard to the leg non-postural positions are with the knee fully extended, with the foot at right angles to the leg and with the foot in the median sagittal plane. The position of wide abduction is one which is particularly non-postural.

However pleasing it may be to discuss those hypotheses theoretically, there is only one way of

putting them to the test and that is by the treatment of a series of fractures.

In the series that is soon to be discussed all the fractures have been treated in the standard positions of Mr. Russell. It may be said at once that not only have we had no bad results that could be attributed to muscle action, when the limbs were placed in postural attitudes, but that we have had opportunities of seeing what bad results might arise were the limbs placed in non-postural attitudes.

THE POSITION OF THE BROKEN ENDS.

Current teaching is that exact apposition of the bone ends must be attained. No one would doubt the wisdom of this were it always possible. We have found that in many cases this is exceedingly difficult. In fact, in two classes of fractures we have found it almost impossible. These are fractures of the shafts of both bones of the forearm and fractures of the shaft of the femur, where the broken ends are completely separated. The impression we have in regard to these fractures is that it would require very violent manipulative force to get the ends in apposition. In fractures of both bones of the leg and of the humerus it has been found possible to get apposition of the fragments, but very often not exact alignment. In these difficult fractures of the forearm and of the femur the screen, though very instructive, has been of little value in getting the ends together.

The important point in regard to fractures of the shafts of long bones is that it is possible very often to restore the contour of the limb even though the ends are not in exact apposition or are not in apposition at all. In fact if the surgeon is working without a screen, he is often so well able to restore the contour of the limb that he is astonished when the skiagram reveals the fragments to be not in good anatomical position. The question is what is to be done in such circumstances. Current opinion is that powerful extension should be first used and if that fails, that the bones should be cut down upon and the ends put in position.

It is in this respect that Mr. Russell differs greatly from current opinion. He told us, you will remember, that in cases of this kind where the contour of the limb has been well restored, the fracture should on no account be touched even though the skiagram shows the bones not to be in anatomical position. In all cases of this kind where we have not been able to manipulate the ends into position, but where the contour of the limb has been good, we have strictly followed this advice and have found it excellent. Of these cases we have been able to follow three of both bones of the forearm and seven of the femur. The results in the case of children have been particularly striking.

Photographs are shown of two fractures of the forearm in children and one in an adult and of one of the femur in a child and in two adults.

In regard to such treatment as this three questions will be asked: (i) Is union firm? (ii) Does union take place as quickly? (iii) Are the end results good?

Is union good? There seems to be no doubt as to the strength of union. All these patients are leading very active lives. Four of the men do heavy labouring work. The skiagrams give the impression that the bone is not only as strong but stronger than it was before the injury. Callus is thrown out in the manner shown in the skiagram and a strong boss is formed surrounding the broken ends. In children, of course, after moulding has taken place, the bones are practically as they were before.

Does union take place as quickly? In these cases union apparently takes place at the same rate as if the ends were in apposition. Our routine in fracture of the femur is to remove the apparatus at the end of the sixth week. For a week the patient is encouraged to move freely in bed and to sit over the edge. One leg is watched closely and if there is any sign of shifting of the fragments, the patient is put up for another three weeks and the same process repeated. If there is no shifting, the patient is allowed to get out of bed and use crutches. At about the eighth or ninth week he is encouraged to put slight weight on the limb whilst still using crutches. This gradually increases for some weeks until at about the twelfth week the patient abandons crutches and walks with a stick. If all goes well, the patient is walking actively at the end of four months and may return to work. We have kept to this routine with these patients as with those in whom there had been good apposition. Up to the present we have not used callipers. We had no ill results until lately, when we had one rather disquieting case.

This was a heavily built boy, aged twenty, with a fracture in the middle third of the femur (Figure XXIII). When taken from the apparatus at the end of six weeks his leg started to bow at the site of fracture. It was put up again for another three weeks and then as union seemed firm, the usual routine was carried out. Unfortunately during the fourth month he was not under observation and slight inward bowing took place. It was not enough to incommode him greatly, but still was very disquieting. In such a case as this when union is not firm at the end of six weeks, a calliper should no doubt be worn. The fact that this was an isolated instance, however, seemed to show that the delay in union was not specially due to the fact that the broken ends were not in apposition.

In the case of the forearm fractures union was firm at the end of three weeks.

Are the end results as good? This is the most important question. Of the patients seven had been treated a year or more ago. All of these patients were well pleased with the results and had no idea that their broken fragments had never been in apposition. The contour of their limbs was good. In no case was there the slightest trace of any disability. With the exception of the man whose femur bowed, there is at present no indica-

tion that the remaining patients will suffer from any disability.

In view of these results we feel fully justified in following Mr. Russell's advice. It is, of course, obvious that the possession of this knowledge is of the greatest value to a practitioner who cannot have recourse either to a radioscopic screen or an operating theatre.

It is important, however, to lay great emphasis on the fact that the contour of the limb must be restored, even with the aid of an anæsthetic and once restored must be maintained. This is particularly important the nearer the site of fracture approaches to a joint. In such circumstances it is usually impossible to restore the contour of the limb without getting the bones in accurate apposition. If accurate apposition is not obtained, disability is likely to arise from two causes: (i) The exuberant callus may interfere with the movement of the joint; (ii) if the fracture is near the end of a bone over which tendons ride, as is the case at the lower end of the radius and the tibia, very great pain results.

A word must be said as regards the use of X rays in fractures. You will remember that Mr. Russell cautioned us about the interpretation of X ray films. We have found this caution very necessary.

In certain cases where the swelling caused by the trauma is so great that no judgement can be formed as to the contour of the limb, a skiagram is very valuable. This swelling is particularly evident when the fracture involves a joint and it is in these fractures that the screen and film examination are so necessary. Apart from this very great care must be used in interpreting X ray plates. Particularly in the type of case that has just been under discussion, they will distort and exaggerate in a most alarming fashion. For instance, in some of the fractures of the femur shown, the skiagram gives the appearance of considerable shortening. Yet in none of these patients is this to be found by measurement.

In one fracture of the lower third of the femur the lower fragment was seen in the skiagram to be displaced backwards and at an angle to the upper. At the same time the contour of the limb was excellent and it was decided to do nothing. The bones united well. The fracture only occurred on January 30, 1928, but so far the result seems to be a good one. The conclusion is that the skiagram exaggerated the actual state of affairs. In such cases as these when the clinical evidence says: "Leave alone!" while the X ray evidence says: "Interfere!" we have learned to rely on the clinical evidence.

THE SERIES.

Fracture of Both Bones of the Leg.

Fractures of both bones of the leg will be taken first as they are very common and as in them it is very easy to study Mr. Russell's principles. There were twelve such fractures.

Particular Features.

One was a compound fracture. Another took place in a stable and was compound. Gas gangrene ensued with death.

A third was caused by a log rolling on the leg. Two weeks after admission gangrene occurred. The leg was amputated, but the patient died.

Procedure.

If it is late at night when the patient arrives or if there is much swelling, the leg is put up in Mr. Russell's pillow splint.[3] This with the addition of two side Cline's outside the pillow makes an excellent splint.

As soon as the swelling allows, usually within a few days, the limb is put up in a plaster mould which embraces the leg on the posterior surface and is open on the anterior, and which extends from halfway up the thigh to the heads of the metatarsals. This is a particularly good splint for these fractures as with the plaster the postural position of the limb can be accurately reproduced.

The fracture is examined radiologically through the plaster.

On the following day the bandage is removed, the edges of the mould turned back and the contour of the limb examined. If it is not satisfactory, a new mould must be made. This does not happen very often after a little practice.

Two bandages are applied, one from the ankle to the thigh and the other from the ankle to the toes. From now on the latter bandage is removed morning and night for half an hour and the patient is encouraged to flex and extend his foot actively, though gently. After three weeks the patient gets up and walks with crutches. After six weeks he is encouraged to put gradually increasing weight on the leg and to do without crutches.

Results.

Apart from the two deaths, the results were good with the exception of one compound fracture. This, although compound, did not become infected. The patient was a man of fifty-five and the fracture did not unite for many weeks. It was a particularly difficult fracture to control and was always getting out of position. The result was an illustration of something about which Mr. Russell told us, namely, that the final union of a fracture takes place very quickly. In this case the resident medical officer had been looking after the patient very carefully until he went away for a long week-end. During this week-end the fracture got out of position and then it took upon itself to unite. This is an illustration of an essential rule about fractures, which is that if they are not seen every day and in some cases two or three times a day, trouble may be anticipated.

Notes on Position and Action of Muscles.

The following cases illustrate very vividly the value of knowledge of Mr. Russell's principles. A patient was recently seen whose tibia and fibula were broken in two places; each fracture was com-

pound, so that the broken ends could be seen. The foot was flexed passively to a right angle. Immediately there was buckling and overriding of the fragments. The cause of this buckling and overriding was long ago pointed out by Mr. Russell. The muscles attached to the *tendo Achillis* do not stretch. As a result the insertion of the tendon acts as a fulcrum, the foot acts as a lever and on being passively flexed forces the fragments against each other, so that buckling or overriding results. The reason that the muscles attached to the *tendo Achillis* will not stretch is made evident by Sherrington's work. The body is in the lying down attitude. The proprioceptive reflex is to the effect that the *tendo Achillis* adopts the position and tonus that is appropriate to the attitude, which is one where the foot is dropped.

If the foot is passively flexed, the muscles attached to the *tendo Achillis* have received no information that they are to lengthen and consequently remain at the same length. The result is as has been described. The difference of active and passive flexion was well seen in another case in which the fracture was oblique. When the foot was passively dorsiflexed, the overriding of the distal fragment could be felt. When it was actively dorsiflexed, there was no overriding. In this latter case, of course, the tonus of the *tendo Achillis* and its muscles had been reflexly inhibited.

To return to the compound fracture. Two further observations were carried out. When the leg was fully extended the fragments were not in very good position. As soon as the knee was flexed, they at once fell into much better position. Next, the fracture being compound, it was put first on a McIntyre splint. In this splint the footpiece is in the median sagittal plane. When the leg was fitted to this splint it was comfortable for a moment, but it was soon noticed that the upper part of the limb had rolled outwards, leaving the lower fragment as it was, that is, turned in with relation to the rest of the leg. Union in this position would, of course, have given a bad result as the knee and ankle joints would not have worked together. No case could have been a better demonstration of the value of knowing in what position to place the lower limb, the three points being the knee flexed, the foot dropped a little over the right angle and the whole leg turned out.

It may be noted in passing that the old back splint, if conscientiously used, keeps the leg in a bad position, with the knee extended, the foot at right angles and in the median sagittal plane.

The usual deformity described in text books as a result of muscle action is shortening and various methods of extension are described. Apart from the fractures described in this series, it has been the author's good fortune to have seen many others at the Children's and Melbourne Hospitals. In all of these the foot has been allowed to drop and in none has shortening been seen and in none has extension been used. As active movement has always been started early, foot drop has never been seen.

Fractures of the Ankle Joint.

There were fourteen fractures of the ankle joint.

Special Features.

Five of these were fracture-dislocations involving both bones. One of these was compound.

Procedure.

The patient is given an anæsthetic and the part manipulated until the contour is properly restored. If a fluorescent screen is available, it is very valuable as the swelling is often so great that the contour is obscured and exact apposition is very necessary.

A plaster mould is applied, stretching from the thigh to the toes. A skiagram is taken.

Thenceforth the procedure is exactly the same as with fracture of both bones in the shaft, with the exception that when the patient starts to walk, he is advised to have the inner side of his boot built up. It will be noted that active movement is commenced in the first week. The mould is a particularly admirable splint for this fracture, inasmuch as it supports the ankle joint behind and at the side during active movement. For this reason the mould is best put on immediately in these fractures, even though the swelling is great. When the swelling subsides, it may be necessary to change the mould.

Results.

The results were good, even in the case of the compound fracture. We have not had any stiff or painful ankles. The special points seem to be great care in reposition of the fragments and early active movement.

Notes on Position and Muscle Action.

The treatment outlined differs from the standard treatment mainly in the fact that the foot is not flexed to a right angle. The tradition that the foot should be at a right angle evidently arose from the fact that in the old method of treatment, when the ankle was immobilized for weeks on end, a stiff joint usually resulted. In this case, if the foot was not at a right angle, the patient could not walk. Now that the value of early active movement is realized, the highly uncomfortable right angle position may be abandoned and the foot allowed to assume its natural attitude.

Fractures of the Tibia Alone.

There were thirteen fractures of the tibia. No special features are noted in this injury.

Procedure.

The procedure is the same as for fractures of both bones. If the fracture is simple, very little difficulty is encountered as the fibula acts as a splint.

Results.

The results were good.

Fractures of the Fibula Alone.

There were six fractures of the fibula.

Special Features.

In two cases the patients were unaware that their bones had been broken until they were driven to hospital by the pain.

Procedure.

The procedure is the same as for fractures of both bones. There was no difficulty in these cases.

Results.

The results were good, although one patient complained of pain over the site of fracture for a much longer period than usual.

Fractures of the Shaft of the Femur.

There were fifteen fractures of the shaft of the femur.

Special Features.

One was in a woman, aged seventy-six; it did not unite. One was the fracture already referred to in connexion with which inward bowing occurred. One was a fracture through a myeloma.

Procedure.

The apparatus used is the one described by Hamilton Russell. We do not as a rule now give the patient an anæsthetic, since we have found it of no value in getting the bones in apposition. The apparatus will usually reduce the fracture automatically. Both legs are now slung in the extension apparatus, for the reason that if the broken one only is put up, the pelvis is pulled down on the affected side, so that the limb is really being treated in an abducted position, which is non-postural. We found the apparatus admirable for these fractures. It is, however, not one that can be put up and left. It has to be constantly watched. The great difficulty we have found with it is the effect of gravity in causing backward sagging of the fragments. This can be easily prevented, as Mr. Russell has described, by a firm, elastic pillow under the fracture site. The point is that the deformity is a constantly recurring one and the pillow has to be adjusted at the very least twice a day. The sister and senior nurse should be trained in this duty. Another difficulty is outward rotation of the limb below the fracture. This is prevented by flexing the leg more and by adjusting the sling round the knee so that it pulls from the outer side.

The rest of the procedure has been previously described.

Results.

With the exception of the three fractures referred to above the results were good.

Notes on Position and Muscle Action.

The deformity that is usually ascribed to muscle action, is shortening. There is no doubt that shortening can occur. The difficulty is to account for its occurrence. The usual explanations have already been given, that it is due to the elasticity of muscle, to the action of muscle tonus or to the influence of some abnormal reflex. It has been suggested that none of these is the correct one.

The following suggestion is put forward as a probable explanation. Just after the accident there is a violent contraction of the thigh muscles. This, of course, produces shortening, as these muscles pass from the pelvis to the leg on both sides of the femur. After this initial spasm has relaxed, it is obvious that the muscles will not return to their original length for the reason that there is not present that slight force necessary to pull the muscles out to their full length. On a large scale the position is the same as when the *flexor pollicis longus* was cut.

If this be true, there should be little difficulty in getting the muscles out to their full length and if what has been said regarding muscle tonus be true, there should be no difficulty in keeping them there. Once the contour of the limb has been restored, if the limb is put into its position of rest and some substitute skeleton supplied for the broken limb, there should be no further trouble with shortening. As a matter of fact this is to a very great extent exactly what we have found. It has been very surprising, in view of what one is taught in text books, to find what little difficulty there is with shortening (at all events while the Hamilton Russell apparatus is being used). Shortening has been the least of our problems; in fact we are gradually coming to the conclusion that there is not present any constant tendency to shortening in fractured femurs. On one occasion the weight was taken off the Hamilton Russell apparatus by a nurse while some adjustment was being made. The nurse forgot to put the weight back again. This was in the evening. In the morning the leg had rolled outwards, but there was no shortening.

A moment's thought, however, will show that though there may not be any constant tendency to shortening, if there is nothing to counteract it, ordinary contraction of the big muscle groups surrounding the femur could easily reproduce the shortening. Such contractions do occur, especially when the patient is getting on to the pan or when he is straining on it. Therefore the extension, although not necessary for the greater part of the time, must be sufficient to counteract the contraction of the thigh muscles that may take place at any time. The above, of course, refers only to the treatment of a fractured bone with the limb in a postural position. Shortening may be observed if the limb is placed in a non-postural position. On one occasion a fractured femur was treated on a straight Thomas's splint with the knee extended. In this case not only was shortening present, but very powerful extension was necessary to overcome it. The explanation of this is probably the same as that of shortening in fracture of the tibia and fibula, when the foot is brought to a right angle. The hamstring muscles have obeyed the impulse of the proprioceptive reflex for the recumbent attitude and have taken up the length that is proper for that attitude, that is, with the knee bent. If the knee is passively extended, there is no impulse to the hamstrings to relax. They remain at the same

length and the result is that the lower fragment is forced up into a shortened position. The necessity, then, for the powerful extension is obvious. The postural tonus of the hamstrings has to be overcome.

In regard to fractures of the lower third of the femur, the deformity usually described as being due to muscle action is backward flexion of the lower fragment. There is no doubt that this position is often seen and it is most probable that the position is due in the first place to the initial violent contraction of the *gastrocnemii*. The bone, however, is certainly not being held in this position by the contraction of the *gastrocnemii*. If the *tendo Achillis* be felt, it is found to be quite relaxed. The explanation is not that the fragment is being held or pulled backwards, but that once having got out of position, it cannot be replaced, for the same reason that in every other fracture of the femur with separation it is difficult to hold the fragment in position. If the fragment could be got back into position, it would be quite content to stay there.

In one case, as has already been said, the contour of the limb was good in spite of the apparent deformity in the film and this limb was not touched. In another patient in hospital at present the skiagram revealed the deformity, but the swelling was too great to allow of the contour being judged. In this case, instead of leaving the bones as in Figure XV, we have been able, by flexing the limb a little more, to get them as in Figure XVII. The swelling is subsiding; the contour seems to be quite good with the limb in this position. The amount of flexion necessary to do this was not great. The angle the leg makes with the thigh would be between 130° and 140°. More acute degrees of flexion are undesirable, as the more acute the flexion, the more does the action of gravity have to be overcome.

In fractures of the upper third the deformity ascribed to muscle action is flexion and abduction of the proximal fragment. We have often seen this deformity soon after the injury. It has already been described how the deformity subsides once the apparatus has been applied. Once it has subsided, we have never seen it recur. Gravity and the pressure of the soft part with the limb on the stretch are sufficient to overcome it. No fracture has been treated with the limb in wide abduction, so that there has been no opportunity of studying the position. Theoretically there is the same objection to it as there is to every non-postural position, that the muscles are being put in one attitude, while their reflexes are telling them to go into another.

Fractures of the Clavicle.

There were twelve fractures of the clavicle. This injury does not produce any distinctive features.

Procedure.

These fractures were treated in the ordinary position of rest for the upper limb, the arm being supported in a sling. No attempt was made to reduce the deformity, if any was present.

The results were good.

The Humerus.

There were eight fractures of the humerus, not including those of the elbow joint.

Special Features.

The fracture in one patient was one in which the radial nerve was damaged and which remained ununited. In spite of two operations the bone is still ununited, although nerve function has returned. The reasons for the non-union were probably faults of technique, which although very instructive are not germane to the discussion.

Procedure.

It has already been described how gravity may be made use of in reducing the fracture. Generally speaking it is possible to get the bones in apposition, although not always in perfect alignment.

After reduction, the limb being kept in the postural position, a pad of wool is put in the axilla and a bandage put round the arm and body not including the forearm. This bandage does not go under the elbow, so that full use is made of gravity in maintaining the contour of the limb.

If it is thought necessary a protective plaster mould may be applied before the bandage is put on to the outside of the arm and shoulder.

After two or three days the patient is encouraged to flex his elbow actively a little during the day. The bandage often becomes loose and needs reapplying.

After three weeks the bandage is taken off and if union is firm, the patient is allowed to move the arm freely, but the arm must be exposed to no stress until six weeks have passed.

In the four fractures near the neck we had no trouble in getting the deltoid into action again.

Results.

With the exception of the ununited fractures the results were good.

Notes on Position and Muscle Action.

Two of my fractures were immediately below the tuberosities. In neither of these was there any difficulty with the proximal fragment. Nevertheless, it is easy to understand how much a fragment could be abducted and outwardly rotated by the muscles attached to the tuberosities during the initial violence reflex due to the injury. If this were to happen, difficulty might arise from the fact that the situation of the fracture is such that there would not be present that slight force that is necessary to pull muscles out to their full length after contraction. The fragment is shaped like a ball and therefore neither gravity nor the pressure of the soft tissues could have much effect on it. The deformity therefore might remain. In these circumstances an attempt would have to be made to engage the broken ends with the arm abducted and rotated outwards. If this were successful, the arm could be brought to the side and the difficulty would be ended. Should such an attempt fail, then, of course, the fracture would have to be treated with the arm abducted and rotated outwards.

This fracture is unique inasmuch as it may involve treatment in a position that is non-postural.

In one fracture (not included in this series) there was a transverse fracture of the lower third of the humerus. The fracture also extended down the bone into the elbow joint. In accordance with current opinion this fracture was treated with the arm acutely flexed. Great difficulty was experienced with the transverse part of the fracture. The ends would not remain in apposition and the lower fragment was persistently angulated forwards. To correct this deformity open operation was undertaken. During the first part of the operation the elbow was kept flexed. After the bone had been exposed, however, the assistant who was manipulating brought the forearm down to the right angle position. Immediately the forward angulation disappeared and the ends fell into perfect alignment. The conclusion that may perhaps be drawn from this very striking demonstration, is that the position of acute flexion of the elbow is non-postural and therefore to be regarded with suspicion.

Fractures Involving the Elbow Joint.

There were four fractures involving the elbow joint.

Special Features.

Only one fracture gave difficulty. This was immediately above the lower epiphysis and there was separation of the fragments, the upper fragment projecting forwards.

Procedure.

We have been unfortunate in not having more fractures of the elbow joint as we wished to give a trial to the right angle position.

In the fracture referred to above the fragments were manipulated into position under an anæsthetic and with the aid of a screen. The elbow was kept flexed to a right angle during this process. Once the fragments had been completely reduced, there was no tendency to recurrence of the deformity.

In all these fractures by way of experiment the joint was kept completely immobilized for three weeks. When the bandages were removed the joint was found somewhat stiffened, but with active movement freedom rapidly returned in a few days.

The results were good.

Notes on Position and Muscle Action.

Current opinion as to the treatment of fractures involving the elbow joint is that they should be treated in acute flexion for the reason that the fragments are thus better kept in position. Without having more cases it would be impossible to discuss the merits or demerits of this position. There is one respect, however, in which it is very inferior to the right angle position and that is as regards comfort. In one of the patients there was great swelling. When the elbow was fully flexed there was throbbing and pain. On dropping the forearm to a right angle this ceased at once. If it could be shown that the position of acute flexion was not necessary to maintain the position of the fragments, then it would no longer be used.

Fractures of the Radius.

There were twelve fractures of the radius.

Particular Features.

There were five Colles's fractures.

Procedure.

The procedure was the same as for fractures of both bones. In the case of Colles's fractures the fingers are left free and the patient encouraged to use them. It is very important, of course, to reduce a Colles's fracture properly.

The results were good.

Notes on Position and Muscle Action.

The Colles's fractures were all treated in the standard position. The fully pronated position, however, in which they are usually treated, is, of course, a postural position.

Once a Colles's fracture was completely reduced, there was no tendency to recurrence.

Authors of text books describe rotational displacements of the shaft of the radius, the displacement depending on whether the fracture be above or below the insertion of the *pronator teres*. Even though the muscles were disposed to cause such a rotation, a study of the disposition of the interosseous ligament will show that such a displacement is impossible.

Fractures of the Ulna.

There were five fractures of the ulna.

Special Features.

In the fracture through the olecranon there was no separation of the fragments.

The procedure was the same as for fractures of both bones.

The results were good.

Notes on Position and Muscle Action.

In the case of the fracture through the olecranon it was found that the arm was more comfortable in the flexed than in the extended position and therefore it was treated in the flexed position. Even were it likely that the triceps would exert any constant tension, a study of Sherrington's shortening and lengthening reactions will show that it would not exert more tension in one position than in the other.

Some reference has already been made to complete fractures through the olecranon. The explanation of the separation of the fragments is probably that there is an absence of that slight force that is necessary to pull the muscle out to its full length after the first violent contraction. The attached fragment is so small that gravity could not be exerting much force. There would be no pressure of soft tissues and it is a very difficult place to apply an apparatus. Therefore operation is necessary with suturing of the fragments.

Fractures of both Bones of the Forearm.

There were eighteen fractures of both bones of the forearm.

Particular Features.

One was a compound fracture.

Procedure.

The difficulty of getting exact anatomical position once the ends have been separated, has already been noted.

The best splint we have found is a plaster mould that extends from just above the elbow to the heads of the metacarpals. The mould embraces the forearm on the ulnar side and is open on the radial side. A good way to keep the position while the mould is being put on, is to place the patient on his back. With the arm by the side, the forearm is bent vertically to a right angle and is halfway between pronation and supination. The hand is then grasped and the arm lifted, so that the upper arm swings just clear of the table. In this position gravity maintains the contour of the limb whilst the mould is being put on.

The limb is examined by X rays through the plaster. On the next day the bandage is removed and the contour examined. Movement of the fingers and slight active flexion of the elbow are encouraged.

The splint is left on for three weeks, after which time union is usually firm, whether the fragments be in apposition or not.

The results were good. None of the patients had difficulty in getting back pronation and supination.

Notes on Position and Muscle Action.

Shortening is usually described in text books. We have not noted any shortening even soon after the accident. There has been no need to use extension. The great enemy in this fracture is gravity and the splint is a particularly good one to counteract its effect in producing sagging of the fragments.

The usual position advised in these fractures is one of complete supination. It has already been pointed out that this is a non-postural position. If the limb were placed in this position, it would be expected that trouble would be encountered from the fact that the proximal fragments would tend to assume their postural position, leaving the distal fragments rotated out. As a matter of fact this does not occur, the reason probably being the intimate connexion of the bones by interosseous ligaments.

Fractures Involving the Wrist Joint.

There were eight fractures involving the wrist joint.

Particular Features.

There was no gross displacement of any of these fractures.

Procedure.

The procedure was the same as for Colles's fractures.

The results were good.

Notes on Position and Muscle Action.

The usual position described for injuries involving the wrist joint is one of dorsiflexion. A splint often used is Jones's "cock-up" splint. The position produced by this splint, however, is not a postural one. If the wrist be brought to the position shown in Sir Robert Jones's brochure "Injuries to Joints," it will be found that it is not an easy position and moreover that it is not a good grasping position. The best grasping position is one in which the wrist is neither flexed nor extended. These fractures were all treated in this latter position.

This is the series. It is not a large one, but it is one that is fairly representative of fractures that are met with in ordinary hospital practice. Whilst it could not be claimed that it proved Mr. Russell's contentions, even if such proof were necessary, it is hoped that the good results of a series of fractures will call attention to a method of treatment whose main features are a magnificent simplicity and a strong appeal to intelligence and common sense.

CONCLUSIONS.

1. The key to the treatment of fractures of the long bones is a knowledge of the positions of rest of the upper and lower limbs.

2. Deformity due to muscular action is seen only immediately after injury. If the limb is supported and put in its position of rest, the muscles will cooperate in keeping the bones in position. There is only one condition necessary for this and that is that after the first violent contraction of muscles there must be present some slight force to pull them out to their original length. If a muscle group is separated from its opponent this force is supplied by gravity or by the pressure of soft part or by an apparatus. There are two situations where such a force cannot be readily applied. These are in fractures of the neck of humerus just below the tuberosities and in fractures of the olecranon of the ulna with separation of the fragments. In both these situations unusual methods of treatment may have to be adopted.

3. In certain classes of fractures it is exceedingly difficult to get apposition of the bone ends once they have been separated, for example, in fractures of both bones of the forearm and in fractures of the femur. In these no bad result need be feared as long as the contour of the limb is restored and maintained.

My thanks are due to Mr. Hamilton Russell for his encouragement and stimulation; to Professor Osborne and Professor Colin McKenzie for private communications; to Dr. Hamilton, Dr. Drake, Dr. Clemons, Dr. Hallowes, Dr. Freeman and Dr. Bonwick, Resident Medical Officers of the Hospital, at different times, for their active cooperation in the treatment of fractures.

REFERENCES.

(1) R. Hamilton Russell: "Papers and Addresses in Surgery," page 282.
(2) *Ibidem*, page 273.
(3) *Ibidem*, page 260.
(4) C. S. Sherrington: "Postural Activity of Muscle and Nerve," *Brain*, 1915, Volume XXXVIII, page 191.

ILLUSTRATIONS TO THE ARTICLE BY DR. C. CRAIG.

FIGURE I.
Lateral View of a Fracture of Both Bones of the Right Forearm in a Boy of Twelve.

FIGURE II.
Anterior View of the Same.

FIGURE III.
Anterior View Six Weeks Later.

FIGURE IV.
Lateral View Six Weeks Later.

FIGURE V.
Lateral View One Year After Fracture.

FIGURE VI.
Anterior View One Year After Fracture.

FIGURE VII.
Lateral View of a Fracture of Both Bones of the Left Forearm of a Man of Fifty-five Years.

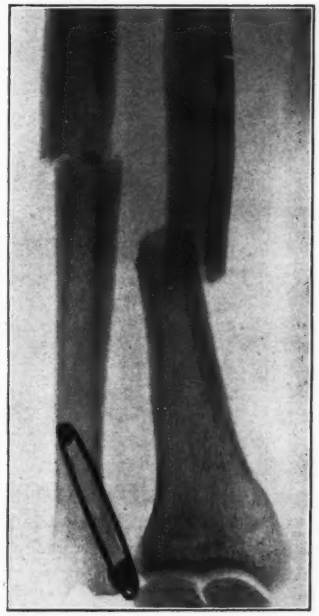

FIGURE VIII.
Anterior View of the Same Limb.

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FIGURE IX.
Anterior View Three Months After Injury.

FIGURE XI.
Anterior View of a Fracture of the Upper Third of the Right Femur of a Man Aged Seventy Years.

FIGURE XIII.
Lateral View Two Years After Fracture.

FIGURE X.
Lateral View Three Months After Injury.

FIGURE XII.
Anterior View Seven Months Later.

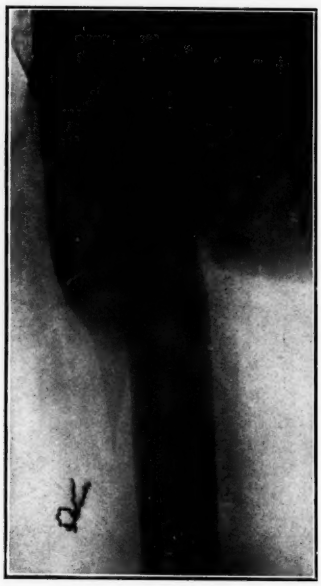

FIGURE XIV.
Anterior View Two Years After Fracture.

ILLUSTRATIONS TO THE ARTICLE BY DR. C. CRAIG.

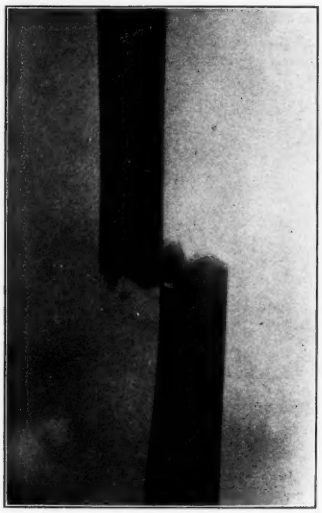

FIGURE XV.
Anterior View of a Fracture at the Junction of the Middle and Upper Thirds of the Left Femur of a Girl Aged Twelve Years.

FIGURE XVII.
Lateral View Eighteen Months After Injury.

FIGURE XIX.
Anterior View of a Fracture of Both Bones of the Right Forearm of a Girl of Nine Years.

FIGURE XVI.
Lateral View of the Same Fracture.

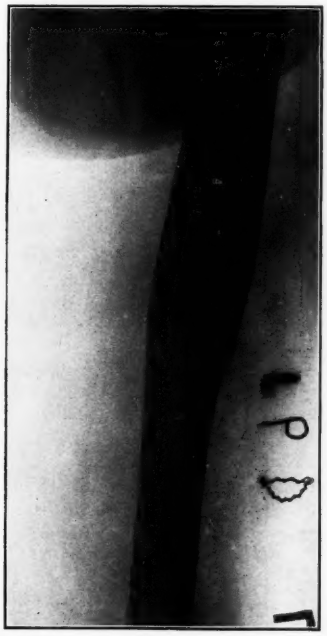

FIGURE XVIII.
Anterior View Eighteen Months After Injury.

FIGURE XX.
Lateral View of the Same Fracture.

ILLUSTRATIONS TO THE ARTICLE BY DR. C. CRAIG.

FIGURE XXI
Lateral View of the Fracture Eleven Months Later.

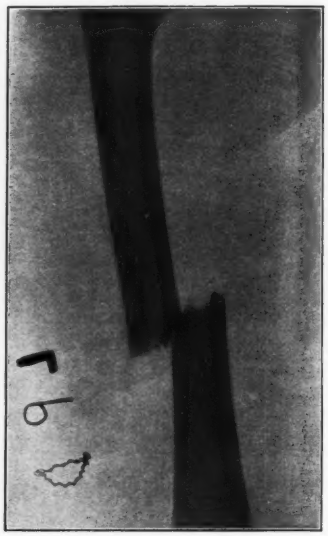

FIGURE XXIII.
Anterior View of a Fracture Through the Middle Third of the Right Femur of a Man of Twenty Years.

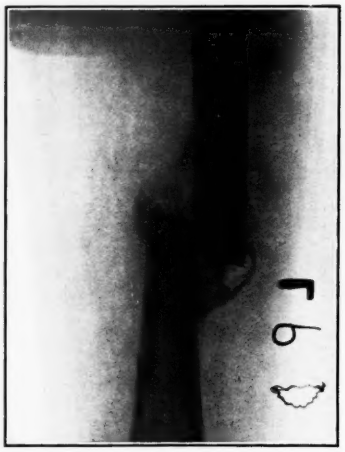

FIGURE XXIV.
Anterior View Six Weeks Later.

FIGURE XXII.
Anterior View of the Fracture Eleven Months Later.

FIGURE XXVI.
Lateral View One Year After Fracture.

FIGURE XXV.
Anterior View of the Same Fracture One Year After Injury.

THE TRANSPERITONEAL REMOVAL OF STONE IMPACTED IN THE PELVIC PORTION OF THE URETER.[1]

By H. W. SWEETNAM, M.B., B.S., F.C.S.A.,
Hobart.

WHILST fully aware that an experience of two cases is not sufficient justification for advocating a departure from accepted surgical practice and least of all perhaps for writing an article on the subject, I decided to do so, first, because I was so impressed with the ease with which the intraperitoneal operation can be performed as compared with the extraperitoneal approach for the removal of stone impacted in the pelvic portion of the ureter and, secondly, because the number of cases of ureteral stone requiring surgical removal is not great. To wait until a large number of cases had been collected, would probably mean no report at all of an operation which in my opinion is of the greatest value. In the removal of stone impacted in the pelvic portion of the ureter the extraperitoneal route is the one universally advised and described in detail in the text books. Little prominence is given to the intraperitoneal method of removal and presumably the operation is but little practised. In Young's "Practice of Urology" the following passage occurs:

> Transperitoneal operations upon the ureter should be avoided if possible, as the extraperitoneal route furnishes by far the most satisfactory method of approach.

Thompson Walker in his book on genito-urinary surgery writes:

> The intraperitoneal route has the disadvantage that in septic cases there is grave danger of infecting the peritoneum.

He further states in describing the extraperitoneal operation:

> The route indicated in this section is the safest and most satisfactory for operation upon this, the pelvic portion of the ureter.

In the article on the surgery of the kidney and ureter in Keen's "Surgery" the following appears:

> The transperitoneal removal of a stone is never justified, since the sterility of the urine cannot be depended upon. Even with careful suturing of the peritoneum over the ureteral incision the danger of extravasation is very great.

With these views I cannot agree. That the dangers enumerated above, namely, infection and extravasation, exist, particularly the latter, cannot be denied, but I maintain that by the development of a careful technique they can be reduced to the absolute minimum, making the operation safe and the one of choice rather than one to be avoided.

As regards infection (peritonitis and pelvic cellulitis) I consider it a bogy not to be feared, if a proper technique be followed. There should be no more risk of infection from opening a ureter than from opening the bowel, providing proper precautions are taken to avoid it.

[1] Read at a meeting of the Tasmanian Branch of the British Medical Association on July 17, 1928.

If the technique as advised below be followed, leakage from the ureter is extremely unlikely, in fact, I believe almost impossible. Should, however, the surgeon be not quite satisfied with his closure of the ureteral wound, an extraperitoneal drain can be passed down to the site of the opening in the ureter in a few minutes without any damage to the abdominal wall, by the method described below.

The advantages claimed for the intraperitoneal operation are:

1. Ease of removal of stone as compared with the extraperitoneal operation.

2. Avoidance of injury to the abdominal wall. A mid-line incision above the pubis does no injury to the abdominal wall.

In an extraperitoneal operation actual division of muscle fibres must take place and usually extensively, as it is impossible to reach a stone placed deeply in the pelvis without a large incision and wide exposure. Even then the space at the depth of the wound is all too small and the location of the stone, let alone its removal, often a task of considerable difficulty. Union of the divided muscles by fibrous tissue occurs which must weaken the abdominal wall. In a young athletic and otherwise healthy male in particular I should be very loath to cut his muscles about as is required in the extraperitoneal operation.

Technique of the Operation.

The patient is placed in the Trendelenburg position, the abdomen is opened by a mid-line suprapubic incision and the intestines are packed off. The diagnosis is then confirmed by palpating the stone in the ureter. Most of the patients who come to operation, have had the stone impacted for some time. This results in a dilatation and hypertrophy of the ureteral walls above the stone. This has an important bearing on the technique of the operation, because no matter in which part of the pelvic ureter the stone is impacted, it will be found possible in a great majority of cases to milk the stone up to a position in the ureter where it can be most easily and safely removed. The site of election is in the true pelvis about four centimetres below the spot where the ureter crosses the iliac vessels. Here an important anatomical feature exists which makes safe closure possible and that is adherence of the peritoneum to the ureter.

During the extraperitoneal operation, when the peritoneum is raised, one notices as the ureter is approached that the ureter lifts away with the peritoneum. This fact is taken advantage of in making a safe intraperitoneal closure.

The stone being located and milked if possible to the site of election or, if this be not feasible, attacked where found impacted, it is steadied and made prominent with the fingers of the left hand. Hot moist packs are now carefully placed by an assistant isolating completely the area to be operated upon. The peritoneum is incised over the stone in the line of the ureter, the incision extending two

centimetres above and below the stone. Great care must here be taken not to reflect the peritoneum off the ureteral wall to which it adheres more than is just sufficient to make the ureteral incision and to form small dorsal and ventral peritoneal flaps. No rough handling is permissible and instruments must be sharp. Particularly is it necessary to make a clean non-traumatizing cut into the ureter over the stone if ready healing is to be expected. Before incising the ureteral wall, two stay sutures of "00" catgut, threaded in the finest round-bodied needles, are placed into the ureteral wall over the stone. These are held by an assistant and the ureter is incised between. The incision in the ureter should be large enough to permit extraction of the stone without bruising the cut ureteral walls. After the stone is extracted, the next important step is to determine the patency of the canal, both up and down, by sounding. This being established, the next step is the closure of the ureteral and peritoneal incisions.

A continuous suture of "0" plain catgut, threaded on the finest round-bodied needles and the mucous membrane, if possible, being avoided, is used to close the ureteral incision. The suture line is then swabbed with tincture of iodine on a small pleget of cotton wool.

Still using fine needles and "00" catgut the peritoneal incision is closed in the following manner: The upper cut edge or edge closest to the abdominal wall is picked up with a continuous stitch and united to the base of the dorsal flap on its outer or ureteral surface. The edge of this dorsal flap is then brought over the ureter and ventral flap and stitched down to the latter, forming an overlap. The abdominal wound is closed without drainage. Should the stone be impacted low in the pelvis and not be movable upwards, for example, as the ureter passes through the cellular tissues of the broad ligament, where no peritoneal covering can be utilized or should closure above for any reason seem insecure, extraperitoneal drainage without injury to the abdominal wall can be provided in the following manner.

At the selected site on the abdominal wall a small five centimetre muscle-splitting incision, similar to a McBurney appendiceal incision, is made. A finger is then passed down extraperitoneally to the site of the ureteral incision, its advance being guided safely by sight through the abdominal wound. A small drain of soft dental rubber dam is then placed in position, a hard rubber tube should never be employed owing to possible injury to the iliac vessels.

The Extraperitoneal Operation.

Previous to operating on the two patients reported here, I have operated on thirteen patients extraperitoneally. It is an operation I have always undertaken with some feelings of misgiving until it was completed, owing to the difficulty of its performance and even in some cases of locating the stone.

In the last five of these cases the following technique was adopted, which facilitated the operation very much.

Before making the extraperitoneal incision, a seven centimetre incision is made over the rectus muscle below the umbilicus, the muscle reflected inwards and the peritoneum opened. The stone is located and the diagnosis confirmed with two fingers through the wound. The stone is moved up if possible to a position where it can be most easily removed. The extraperitoneal incision is then made and when the ureter is reached, the stone is again located through the abdomen. It is then often possible to lift the stone well up into the extraabdominal wound. In all cases it is steadied and localized by the finger in the abdomen, making its removal and suture of the ureter much easier than would otherwise be the case. The small abdominal incision adds no risk to the operation, confirms the diagnosis and undoubtedly makes the removal of the stone a much easier proposition.

Case Histories.

The first patient, Mrs. W., aged thirty-five years, was referred to me by Dr. Rogers and was operated on in September, 1923. Briefly the history is as follows: For about eight years she had been suffering from more or less constant right loin pain, with occasional attacks of vomiting. For these symptoms she had had her appendix removed at the Hobart General Hospital, with, as might be expected, no relief. When she was seen by Dr. Rogers some time later, the pain in the back had become more intermittent and severe in character and each attack was accompanied by vomiting. These attacks had persisted for twelve months and were becoming more severe and frequent. She also complained of a painless swelling of the right leg of several months' duration. She had lost considerable weight. Never at any time was there any dysuria, polyuria or hæmaturia.

On examination she was a spare woman who had obviously lost weight, the chest was normal, examination of the abdomen revealed no abnormality, except for the scar of the appendix operation and some slight tenderness over the right renal region, but no enlargement of kidney could be detected. Pelvic examination revealed no abnormality. There was, however, a well marked œdema of the right leg from foot to groin. The urine was normal, except for a heavy cloud of albumin.

It was first thought that the trouble was due to a thrombosis of the right iliac vein, though nothing in the history suggested a possible cause. An X ray examination was then made and revealed two large shadows. They were so large, especially that on the right side, that the possibility of a foreign body could not be excluded. In view of the uncertainty of the diagnosis an exploratory mid-line suprapubic incision was made. The shadows were then found to be caused by two stones, one impacted in each ureter as they crossed over the iliac vessels, that on the right being much the larger. On grasping the stones, I was surprised to find the ease with which they, together with the ureter, could be lifted away from the pelvic wall almost into the abdominal incision. The invitation for intraperitoneal removal was too tempting to resist. This was performed as described above. No drainage was employed. The patient's convalescence was uneventful. The œdema of the leg rapidly disappeared and she has remained well since.

Several unusual and interesting features of this case are worthy of note.

First, there was a stone impacted in both ureters. Second, the size of the stones, especially the right one which weighed 6·72 grammes (one hundred and

twelve grains), thirdly, the œdema of the right leg, presumably caused by the pressure of the stone on the iliac vessels, as it rapidly cleared up after the operation, fourth, total absence of symptoms referable to the left side in spite of an unusually large stone should be noted.

In the second case, that of Mrs. R., aged twenty-four, referred by Dr. C. G. Thompson, of Launceston, and operated on in April, 1928, the intraperitoneal operation was deliberately planned and carried out. The history of this case is not important except for the fact that in two of her attacks of ureteral colic the patient had rigors, with a temperature on one occasion rising as high as 40·5° C. (105° F.) and remaining between 38·1° C. (100·6° F.) and 40·3° C. (104·6° F.) for six days. This occurred three weeks prior to operation and should surely be a case in which infection might be expected, yet none occurred. The stone was found impacted in the ureter as it passed through the broad ligament, just beyond the ovarian vessel. It was milked up to the site of election and removed as described above. No drainage was employed. The convalescence was uneventful.

Reports of Cases.

RADIO-HUMERAL MENISCUS.

By J. HOETS, M.B., Ch.M. (Sydney),
Honorary Orthopædic Surgeon, Lewisham Hospital, Sydney.

THE condition here described has been observed on two occasions. In each instance the symptoms complained of and the condition found on operation were very definite and the relief after operation complete.

The "meniscus" consisted of a semilunar fold of synovial membrane which had become nipped between the head of the radius and the capitellum of the humerus. The appearance of this fold on opening the joint was very reminiscent of a meniscus in the knee on a small scale. In both cases observed the fold of synovia was quite hard, pale and almost of the consistency of cartilage. The symptoms consisted of pain on extending the elbow, particularly if in this position an attempt was made to grasp and raise any object. In one patient the symptoms came on suddenly after a fall on the outstretched hand and had persisted for eighteen months when first seen. In the other the apparent cause was trauma caused by the oft repeated lifting of weights with the extended elbow. The condition was treated as a "tennis elbow" without success before operation was advised. At operation the findings were identical, that is the capsule bulged on being exposed and a considerable amount of fluid escaped when it was incised. The semilunar fold was at once apparent and was excised without difficulty with a tenotome. Immediate relief was experienced by the patient as soon as movement of the elbow was begun.

Case Histories.

The following are the case histories:

CASE I. M.C., aged forty-five, a female, married, cook, was seen on October 24, 1927, and complained of pain in the right elbow of two weeks' duration. Pain was noticed chiefly on lifting pots *et cetera* from the stove with outstretched hand. The disability was increasing. On examination, tenderness was present over the right radio-humeral joint with some swelling.

Diathermy was tried without avail for a time and the patient was not seen for a period during which she continued her work.

On February 10, 1928, the patient again appeared, stating the pain to be so bad that work was impossible. At this time she could not extend the elbow without pain.

On March 2, 1928, a diagnosis of tissue interposition between the head of the radius and capitellum having been made, an attempt was made to displace it by the manœuvre described by G. Percival Mills in *The British Medical Journal* of January 7, 1928, in an article on the treatment of tennis elbow. This was unsuccessful and the joint was opened by an incision through the common extensor tendon. The capsule bulged and on incision a quantity of synovial fluid escaped. A sickle-shaped structure, pale in colour, was observed protruding from the postero-lateral aspect of the synovial lining of the capsule between the head of the radius and the capitellum in such a manner that on extending the elbow it would inevitably become engaged. This was dissected away and on examination found to be almost cartilaginous in consistency. The capsule and wound were closed with plain gut. Recovery was uneventful.

Several months later the patient who was back at her work, had no disability.

CASE II. A.A., aged thirty-nine years, a female, married, was seen on May 25, 1928. She had injured her left elbow eighteen months previously in a fall. It had been painful ever since and was getting worse. Pain was present on clenching the fist or extending the elbow. She could not lift anything with the outstretched arm. She noticed that the elbow "clicked" on movement.

On examination there was tenderness over the radio-humeral articulation and clicking was produced on pronation. X ray examination revealed no abnormality. Treatment was carried out for a couple of months and included strapping of the forearm and diathermy; this gave no relief. Operation was advised.

At operation on July 12, 1928, a semilunar fold of synovial membrane, flattened and pale, interposed between the head of the radius and the capitellum, was dissected out and the capsule and wound were closed with catgut.

Massage and active movements were instituted on the twelfth day. Three months later the patient reported herself as perfectly well, except that the arm did not feel quite so strong as formerly, but was improving.

Comment.

1. It would seem likely that many chronic "tennis elbows" are of the above description.

2. Natural cure would in time probably have occurred by the meniscus being withdrawn through contraction.

Reviews.

THE EXTRA PHARMACOPŒIA.

IT should be unnecessary to introduce "The Extra Pharmacopœia" or its author to the medical profession in the British Empire.[1] This compact volume has enjoyed a well earned popularity ever since the first edition was published forty-five years ago. The new edition, the nineteenth, has followed its predecessor after four years. It has increased in size by forty-four pages. The additions may be measured by reference to the index and posological table which occupy ninety-seven and a half pages as compared with ninety-one and a half in the 1924 edition. Dr. W. Harrison Martindale, the author, is an authority on many subjects in pharmacy. His work in revising and expanding the book which was started by his father, the late William Martindale, and the late W. Wynn Westcott, has given him a wide knowledge of pharmacology, although his opinion on therapeutical matters is necessarily based on the experience of others. The book is a complete compendium of the drugs and medicaments in use in the treatment of disease. We have sought for many common and many obscure preparations and have found a record of the nature, dosage and uses of each one sought. If anything has been missed, it must be a very rare material. The value of the book to the medical practitioner depends on this thoroughness and on the accuracy of the records. Great care has been taken to summarize in connexion with each preparation the opinions and data published in

[1] "The Extra Pharmacopœia of Martindale and Westcott." Revised by W. Harrison Martindale, Ph.D., Ph.Ch., F.C.S.; Nineteenth Edition; Volume I; 1928. London: H. K. Lewis and Company, Limited. Foolscap 8vo., pp. 1243. Price: 27s. 6d. net.

medical literature. Martindale and Westcott's "Extra Pharmacopœia," demands some special skill from its users. It would be unwise for the reader to accept with blind faith each and every annotation on the therapeutic value of the preparations. The value of the book is greatly enhanced, if the reader will take the trouble to refer to the literature and to exercise his judgement in distinguishing between the objective opinions of independent pharmacologists and clinicians and the less unbiased statements of pharmaceutical firms and pharmacologists employed by these firms to investigate the physiological properties of their products. Every medical practitioner should possess the latest edition of this splendid book and should learn to gain the utmost benefit from the information contained in it.

It would occupy more space than is available to refer to each of the new preparations included for the first time in the new edition. In some instances the information is scanty and unsatisfactory. We may cite the short references to a new disinfectant called "Monsol." The record is merely a repetition of the manufacturers' claims. In some instances the opinions of writers who cannot be regarded as real authorities, are quoted. This is not to be regarded as adverse criticism, for the author makes no claim that his book is to be relied on for the purpose of choosing between two or more preparations for a particular purpose. Dr. Martindale has definite views on certain aspects of pharmacology and he is somewhat inclined to permit these views to become apparent. In the preface he refers to himself as "we" and as "the writer," sometimes in one sentence. It would be well if care were taken to avoid this and some other defects in composition in future editions.

PSYCHO-PATHOLOGY.

"PRINCIPLES OF ABNORMAL PSYCHOLOGY" by Professor Conklin, of the University of Oregon, is a book intended primarily for advanced undergraduate students of psychology. It is an introduction to the study of abnormal behaviour, but it should have appeal to a far wider circle of readers.[1] It is impossible for any book of moderate size to cover the whole field of psycho-pathology and in this work the author has selected for discussion a number of topics in terms of their intrinsic interest or importance and has then collated from the literature the most significant facts and theories relating thereto. The book is written from the standpoint of the scientific psychologist and not from that of the physician and the psychology of the abnormal is regarded as one of the bases. Sciences indispensable to, but distinct from the practice of medicine and all reference to medical treatment are omitted accordingly. One of the best features of his work is the fact that no brief is held for any particular school of thought and rival theories and interpretations are presented and criticized as far as possible impartially. Among the unusual subjects discussed are spiritualistic phenomena and the mental effect of drugs. In the introductory chapter will be found an excellent section dealing with the conditions of hereditary native endowment and experience which determine the development of a normal mind. It would have been better perhaps had this section been somewhat expanded and the section on theories of the unconscious relegated to a separate chapter. The chapter on distorted thinking and the nature and influence of complexes, admittedly a very difficult one to write, is perhaps not quite so satisfactory as most of the others. We are glad to note that the author mentions with reserve the theory that all the organic changes to be found in *dementia præcox* are the consequences of introverted thinking and not the cause of the peculiar mental life. The chapters on hysteria, sleep and dreams are particularly good. As a whole the volume may be strongly recommended to all medical practitioners who wish to obtain a better understanding of the abnormal behaviour of their psycho-neurotic patients, or who need a first class summary of the outstanding facts and theories of psycho-pathology.

[1] "Principles of Abnormal Psychology," by Edmund S. Conklin; 1928. London: George Allen and Unwin, Limited. Royal 8vo., pp. 457. Price: 15s. net.

THE TECHNIQUE OF LOCAL ANÆSTHESIA.

WE have read the book on the technique of local anæsthesia by Dr. de Takáts and we are glad to endorse it as a careful, sound and satisfactory handbook. Most books on local anæsthesia are founded on Braun's text book. Dr. de Takáts in his preface states that he makes no claim to originality and that his book is not recommended as a substitute for Braun's work which he acknowledges as the basis and chief source of all knowledge on the subject. For a surgeon intending to acquire a good working knowledge of local anæsthesia, we think it would be a good investment to get both books, Braun's and de Takáts's. He will then have all he needs in the way of books and practical experience will do the rest. It is a grave mistake for a surgeon to imagine that his natural gifts suffice for any occasional operation under local anæsthesia. He must do two things, study the works of the masters of technique and apply himself to personal study by practice, beginning with the simpler types and gradually mastering the technique of one operation after another. Dr. de Takáts's book has been written as a handbook to a post-graduate course of instruction and it is therefore explicit and didactic, as is suitable for beginners. We find that he advises certain methods as better than others and he warns against some as never to be used. With all his advice on these points we are in thorough agreement. We think he does not put quite so much stress as we would ourselves on the help given by preliminary medication with morphine and hyoscine, but that is a matter that will solve itself as experience developes in the actual practice of the individual surgeon. The price of the book is very moderate. It is well illustrated and the type and paper are good.

THE TEACHING OF GYNÆCOLOGY AND OBSTETRICS AT LIVERPOOL.

IN a most interesting and concise manner Professor Blair Bell describes his organization and administration for teaching in a well arranged booklet entitled: "The Material and Methods of the Gynæcological and Obstetrical Department in the University of Liverpool."[2]

In a brief introduction the author refers to his reasons for describing the arrangements, "alas, still far from perfect." The subject matter is arranged in two sections. In the first are described the material and methods of the University department and includes a plan of the buildings. There are interesting sections dealing with the museums, laboratories, University regulations, personnel and research. The second section deals with The Royal Infirmary Department, the distance of the two departments from one another being only ninety-five yards. There are plans of the complete obstetrical and gynæcological block with a description of the accommodation, operating theatres *et cetetra*. Other paragraphs are devoted to the staff, clinics, case records and standardization of operative technique. There are many well reproduced photographs of the museums, lecture and operating theatres, operations *et cetera* and reproductions of the hospital case cards.

The teaching in both departments has been wisely and exceptionally well correlated as the result of experience, vision and generosity. It is apparently the fulfilment of the author's ideal. To all who are interested in modern methods of teaching the subjects of the medical curriculum, this monograph should be of great value and much praise and many congratulations are due to Professor Blair Bell for the publication of this, the result of a life work.

[1] "Local Anesthesia: A Short Course for Students and Surgeons," by Géza de Takáts, M.D., M.S., with a foreword by Allen B. Kanavel, A.B., M.D., D.Sc.; 1928. Philadelphia: W. B. Saunders Company; Melbourne: James Little. Royal 8vo., pp. 221, with illustrations. Price: 18s. net.

[2] "The Material and Methods of the Gynæcological and Obstetrical Department in the University of Liverpool," by W. Blair Bell, B.S., M.D., (London), Hon. F.A.C.S.; 1928. Manchester: Sherratt and Hughes. Crown 4to., pp. 67; with illustrations. Price: 2s. 6d. net.

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A Matter of Responsibility.

THE suggestion has been made from time to time in various places that medical practitioners serving in an honorary capacity at public hospitals should be protected against malicious and unjustifiable attacks by patients and their friends. It is held by some that the hospital authorities should assume the responsibility for the actions of their medical officers or in the alternative that they should insure their medical officers against loss by injury or illness resulting from the performance of duties to patients in the institutions and also against financial loss from actions at law in connexion with the treatment of patients in hospitals. Many honorary medical officers of hospitals have been compelled to defend in the courts actions for negligence or malpraxis and the court has found that there was no evidence of failure of duty. In the majority of instances the medical officer has taken the greatest care to arrive at a correct and full diagnosis and has applied the treatment suited to the illness or injury. Often the medical officer has expended a very great deal of time and energy in the investigation of the patient's condition. The action of the patient may be prompted by some sinister advice given by an irresponsible person or it may be the outcome of the gambling propensities of an impecunious patient. That a conscientious medical practitioner should be subjected to an unfounded attack of this kind is deplorable. He is, however, exposed to similar attacks in his private practice and on this account he protects himself by subscribing to a medical defence association. All wise practitioners belong to such an organization.

There is a real difficulty connected with the proposal that the hospital authority should relieve the honorary medical officer of his responsibility. A board, society, firm or other body may be liable for the actions of its employees, but in such a case the employer has the power of controlling the performance of the duties of the employed and has the right to dismiss the employee should he carry out the work in a manner other than that prescribed by the employer. A hospital board might be held to be responsible for the actions of the salaried medical officers in its employment. If a resident medical officer through carelessness, neglect or wantonness failed to render such skilled treatment to a patient in the hospital as the latter would have a right to expect and if the patient suffered from this failure, it is unlikely that he could shield himself behind the fact that he was a salaried employee of the hospital board. He would, however, be justified in looking to the board to protect him from unwarranted attacks by irresponsible patients. But in the case of an honorary medical officer the matter is different. Although the medical officer is appointed to perform certain duties in connexion with the treatment of patients, he is in a relatively independent position. The board is not competent to dictate what he shall do and how he shall do it. He possesses the knowledge necessary for the diagnosis and treatment of the patient's condition and he would not tolerate any interference on the part of the board in his handling of his patient. If he has been guilty of malpraxis, he has to suffer the penalty. He is bound by law to exercise skill and care and the law presumes that he has the knowledge needed to treat a patient with an illness or injury. The main object of what the Americans have called "hospital standardization" is to raise the standard of efficiency in hospital practice and to reduce the number of avoidable mistakes to a minimum. Since a board of laymen is incapable of controlling and judging the work of medical practitioners, the task of evaluating the services of the members of the medical staff must be performed by a committee composed by the honorary medical officers themselves. It is therefore impracticable to require the hospital authorities to relieve the honorary medical officers of their responsibilities to their patients in the hospitals. It would, of course, be eminently desirable to induce the boards to insure the members of the medical staff against loss incurred by malicious or unwarranted actions for damages by patients or their relatives. As the

honorary medical officers are rendering valuable services to the institutions, it would not be unreasonable to ask the boards to indemnify them against financial loss from such an action at law, provided that they can prove that they were not guilty of neglect, carelessness or lack of technical knowledge. It is not improbable that if it were known that honorary medical officers would have the financial backing of their hospital boards, save in exceptional circumstances, even the most irresponsible person would hesitate before he started an action.

There is one set of circumstances in which the hospital boards should be required to assume full responsibility for any harm that might arise from neglect. When a patient is admitted to a hospital and is not examined by a competent medical officer within a reasonable length of time, the delay may have serious consequences. The board is to blame if there are no definite regulations concerning the duty of the medical officers to examine every patient within a prescribed time after admission. The regulations should allocate this duty to a particular medical officer and the minimum requirements of this service should be properly defined. Under no circumstances should it be left to a nurse or to a porter to use her or his discretion as to whether or not a medical officer should be summoned to the patient. If such a regulation exists and has not been obeyed, the responsibility will rest with the medical officer specified.

Current Comment.

HISTAMINE AND INFECTION.

IT is a well-recognized clinical fact that a suppurative, tuberculous or even syphilitic lesion frequently occurs in a part which has been subjected to injury, in an area which is spoken of as a *locus minoris resistentiæ*. This, like many other euphonious terms, serves as a cloak for ignorance. The resistance of the body is a complex and far from fully understood subject. It is easy to understand that trauma in the presence of a septicæmia would result in the extravasation of infective blood and in the formation of a lesion. Neither is it difficult to realize the way in which pyæmic abscesses arise from the mechanical blocking of a vessel by an infective embolus. It is a different matter when there is no obvious extravasation with the septicæmia, when there is no reason to justify the postulation of septic emboli, no source from which the emboli could arise. The injury may have taken place some time before and, although definite, may have been so slight that the patient has almost forgotten it. The organisms present in the blood stream obviously have to gain access to the tissues, if they are to multiply there and give rise to their characteristic lesion. It thus becomes necessary to discover how their passage through the endothelial walls is made possible. In 1919 Bullock and Cramer carried out some experiments with *Bacillus welchii* and *Clostridium œdematis maligni* spores. These they injected into mice and they found that the organisms became localized not at the site of injection, but at another area which had previously been injected with ionizable calcium salts. Kettle in 1924 showed that tubercle bacilli become localized at sites in which vascular dilatation has previously been brought about. Other observers have produced evidence to show that ultramicroscopic viruses tend to become localized in areas that have been subjected to irritation.

G. M. Findlay has recently investigated this subject.[1] He has previously suggested that the localization of the fowl pox virus in the skin was the result of congestion of the capillaries of the dermis and of damage to the capillary endothelium. He refers to the investigations of Lewis and his collaborators who showed that all forms of injury lead to the liberation in the skin of a histamine-like substance, probably histamine itself and that this histamine-like substance causes dilatation of the minute capillaries in the injured area and increased permeability of the capillary endothelium. A short abstract of an article by Lewis and Harmer, dealing with this work, will be found in THE MEDICAL JOURNAL OF AUSTRALIA of June 4, 1927, at page 832. Here also will be found an account of work by Best, Dale, Dudley and Thorpe of which Findlay also makes mention. Findlay carried out tests to investigate the hypothesis that liberation of histamine or of a histamine-like substance in injured tissues is the specific reaction which causes organisms present in the blood to become isolated in these tissues. He has inoculated animals intravenously with various species of bacteria and of ultramicroscopic viruses and at the same time has injected histamine into localized areas of tissue. The solution of histamine used was a 0·5% solution of histamine acid phosphate dissolved in physiological saline solution to which sodium hydrate was added immediately before use to give a hydrogen ion concentration of 7·2. As a control a phosphate buffer solution of the same hydrogen ion concentration was used. The virus of fowl pox or *epithelioma contagiosum* was injected into the pigeon, that of vaccinia into the rabbit and that of Rous sarcoma into the fowl. *Staphylococcus aureus, Streptococcus hæmolyticus* and pneumococcus were used with the rabbit. The general method of procedure was to inoculate the infecting organism intravenously and then at appropriate intervals to inject the solution contain-

[1] *The Journal of Pathology and Bacteriology*, October, 1928.

ing histamine into the area selected for the localization of the organism. As a control the phosphate solution was injected into a corresponding area on the other side of the animal. In all injections, intradermal or intramuscular, great care was taken to pass the inoculation needle along the same track to minimize as far as possible the effects of the injury due to the needle. It was found that a lesion was always produced at the site of the histamine injection, the control side was not invariably clear, but was so in the large majority of instances.

In view of the localizing effect of histamine on the viruses of fowl pox and vaccinia Findlay states that the question arises as to whether the action of the histamine is limited to its action on the permeability of the capillary endothelium or whether it causes "a general rupture of the defence mechanism" of the tissues of a similar character to that produced by Bullock and Cramer and by Kettle to which reference has already been made. To test this dilutions of vaccinia virus were made in physiological saline solution one in 1,000, one in 10,000 and one in 1,000,000. A rabbit was then inoculated intradermally in four areas on the right side with 0·05 cubic centimetre of the histamine solution and in four areas on the left side with 0·05 cubic centimetre of the physiological saline solution. Ten minutes later the dilutions of vaccinia virus were inoculated into the same areas as had received the histamine and saline solution. On the control side a reaction was obtained up to a dilution of one in 100,000, while on the histamine side the result with a dilution of one in 100,000 was only "doubtfully positive." A similar result was obtained with dilutions of fowl pox virus. It is concluded that histamine does not have any effect in rupturing the general defence mechanism comparable with that of calcium.

It is obvious from the work of Lewis and his collaborators that the mere insertion of a needle into the skin will result in the setting free of a histamine-like substance. Findlay recognizes this and he states that it may be seen that the injury done to the tissues by the entry of the needle is not the essential factor in localizing the infecting organism, because no comparable lesion developes at the site of injection of the phosphate solution. He also states that the histamine-like substance shown by Lewis to be set free as a result of numerous and widely different forms of stimulation, produces three distinct events: (i) a primary and local dilatation of the minute vessels of the skin, (ii) a widespread dilatation of the neighbouring strong arterioles brought about through a local nervous reflex and (iii) locally increased permeability of the vessel walls.

Findlay has carried out a useful piece of work. It follows logically on that of Lewis. Although its correctness appears highly probable, it need not be the only possible explanation. He states that it is only by further work that the relationship between the rupture of the defence mechanism produced by such substances as soluble calcium salts can be correlated with the action of histamine on the capillary endothelium. It may be asked whether there is really any need for doing so. Histamine is one of the products resulting from the breaking down of protein. It is present in considerable quantities in the body, as has been shown by Best, Dale, Dudley and Thorpe. When histamine is formed at the site of an injury, it probably has an effect on the colloidal balance of the cells. When this balance is upset, it is not difficult to understand that the permeability of the endothelial cells may be affected. With the injection of quantities of soluble calcium a strong electrolyte is introduced into the circulation. Calcium undoubtedly exists in all animal cells, but not in a similar or in so concentrated a form as when introduced directly by inoculation. The effect on the physical relationships of the cells will be very great and the damage will be in proportion to this effect. With serious damage to cells, it will not be a difficult matter for lesions to arise as a result of organisms present in the blood stream.

In all this work consideration has been given only to the tissues of the patient; none has been given to the infecting organism. It is known that certain organisms and certain strains of organisms have a predisposition for certain tissues. Organisms from osteomyelitic lesions on injection into animals have produced osteomyelitis and so on. The question is not merely one of permeability of the vascular endothelium; no doubt this is of vital importance, but the physico-chemical relationships of the infecting organism demand consideration.

TESTS FOR DRUNKENNESS.

THE use of biochemical tests for the determination of alcoholic intoxication of an individual is no new matter. Several workers have reported studies of this nature. It is doubtful, however, whether the subject has received the attention which it merits, and it is certain that sufficient practical use has not been made of available tests. It will therefore not be inappropriate to draw attention to the Alvarenga Prize essay for 1927 by Emil Bogen.[1] Bogen has investigated five hundred persons. One half of these yielded specimens for examination and from the remainder no specimen was obtainable. Intoxication was regarded as being present only when there was clear and convincing evidence of loss of control and of coordination of the muscles of speech and of locomotion in addition to mental alterations and the odour and symptoms of alcoholic imbibition. Samples of urine, cerebro-spinal fluid, blood and breath were examined. A general and remarkable correspondence was found between the laboratory findings and the clinical symptoms. Bogen rightly holds that the former should always be regarded in the light of the latter. In other words when doubt is present clinically, caution must be exercised.

[1] *The American Journal of the Medical Sciences*, August, 1928.

Abstracts from Current Medical Literature.

PHYSIOLOGY.

Absorption of Insulin from the Alimentary Tract.

FROM time to time evidence has been brought forward to show that "Insulin" can be absorbed in small amounts from the intestinal tract, but the concentration of "Insulin" reaching the general circulation has always been small compared with that which follows subcutaneous injection. In spite of large doses given, there has never been any evidence of hypoglycæmia. J. R. Murlin and E. E. Hawley (*American Journal of Physiology*, December, 1927) have taken advantage of the anti-tryptic power of blood serum to protect "Insulin" given by stomach tube to dogs whose pancreas has been removed, from pancreatin given with the food. The pancreatin was necessary to keep the dogs in good nutritive condition. "Insulin" protected in this way can be absorbed in significant amounts from the alimentary tract. In some cases the respiratory quotient was raised quite as high as following subcutaneous injection. In several instances the urine was made entirely sugar-free, although the dogs were on a full diet. The effect on the blood sugar is not so sudden nor so great as when "Insulin" is given subcutaneously. The liver seems to protect the body against the shock-like effects of sudden access of insulin to the general circulation. Dogs were kept alive for long periods, up to one hundred and twenty-five days, after complete pancreatectomy and while on full diets.

The Mechanism of Voluntary Muscular Fatigue.

IT has long been recognized that voluntary muscular fatigue is largely a phenomenon of the central nervous system, but the question has not been studied in detail. C. Reid (*Quarterly Journal of Experimental Physiology*, August, 1928) has studied the phenomenon both in man and in animals. In the human subject the contractions of the *flexor sublimis digitorum* of the middle finger were recorded by a Mosso's ergograph. In the experiments in which ischæmic conditions were studied, ischæmia was induced in an arm by tightly wrapping round the hand and forearm an Esmarch elastic bandage. Limitation of muscular effort has been ascribed by A. V. Hill and others to the amount of lactic acid which can be borne by the muscles. After about thirty minutes of quiescent ischæmia voluntary impulses were ineffective, although peripheral nerve stimulation could always elicit muscular responses; this indicates that the limitation of muscular effort in this particular instance is "central" while influenced by conditions in the quiescent ischæmic muscles. In prolonged quiescent ischæmia there is evidence that there is failure of conduction of impulses from nerve to muscle before the muscle itself has lost contractility. While voluntary fatigue is primarily central in its incidence, there may or may not be an overlapping effect in the way of failure of contractility of the muscle itself; this varies according as relatively quick or slow series of voluntary effects are used to induce fatigue. With a slow series there is little evidence of reduction of contractile power. Recovery after voluntary fatigue is better if the load is removed from the muscle than if the muscle is left loaded or kept in static contraction. Ischæmia *per se* does not profoundly affect the contractile response to a voluntary effort for about fifteen minutes. After this a pronounced weakening developes and peripheral stimulation then causes contraction that is less weakened than the response to voluntary effort. The fatigue of static contraction seems to be essentially central in origin.

The Regulation of Respiration.

THE prevailing theories of respiratory control are in many respects open to serious exception. R. Gesell (*The Lancet*, September 22, 1928) who has for several years been studying the question, gives in the form of an address a detailed account of the results of the experiments performed by himself and his coworkers and the conclusions he has drawn from them. It has been generally held that there is a direct relation between the hydrogen ion concentration of the blood and the rate and depth of respiration, that the hydrogen ion concentration of the blood controls the respiratory centre. With the use of various continuous methods, acute respiratory disturbances produced by administration of carbon dioxide, sodium carbonate, sodium bicarbonate, mechanical asphyxia, low and high alveolar oxygen, sodium cyanide and hæmorrhage and reinjection were followed and analysed with respect to the acid base equilibrium of the tissues and body fluids. In three procedures there was a direct relation between the hydrogen ion concentration of the arterial blood and pulmonary ventilation: the administration of carbon dioxide, of sodium carbonate and of cyanide during constant artificial ventilation. In five procedures there was an inverse relation between the hydrogen ion concentration of the arterial blood and pulmonary ventilation: intravenous injection of sodium bicarbonate, mechanical asphyxia, administration of a gaseous mixture low in oxygen, intravenous injection of cyanide during normal ventilation and hæmorrhage. The experiments indicate that there is a correspondence between tissue acidity and pulmonary ventilation. The exact mechanism by which acidity operates, cannot be predicted until the problem of automatic discharge of rhythmically active cells is better understood. Up to the present no direct method has been employed for studying changes in acidity of the tissue fluids of the brain. The closest approach has been the study of changes of acidity of the cerebro-spinal fluid. If the assumption is correct that the cerebro-spinal fluid reflects changes in the acidity of the tissue fluids in the brain and if acidity is the primary factor in respiratory control, then changes in hydrogen ion concentration within the cell rather than in the immediate cell environment, is the predominant factor. This is indicated in the experiments on the effects of administration of low oxygen and of cyanide on the acidity of the cerebro-spinal fluid. When low alveolar oxygen is administered by artificial ventilation, the cerebro-spinal fluid may show no immediate change or may turn distinctly acid, but when the oxygen is administered by normal ventilation, the change is sharply alkaline, yet ventilation is definitely stimulated under both conditions. When sodium cyanide is administered during artificial respiration, the cerebro-spinal fluid turns acid, but if it be injected during normal respiration, the change is alkaline. Respiration is stimulated in either procedure. These results suggest that changes within the cell rather than in the immediate cell surroundings are the determinant factors.

Differential Relaxation.

IT has been known for some time that when an extreme general relaxation is brought about in subjects who have been specially trained to relax, the knee jerk is diminished often to the vanishing point. E. Jacobson (*American Journal of Physiology*, October, 1928) has carried out investigations to see whether in human subjects activities like reading or writing may go on even if the individual is at the same time so relaxed that tests reveal a diminished knee jerk; that is, whether moderate activity in some muscle groups may permit a certain relaxation in others. If any degree of relaxation be possible under these conditions, it must be differential. Differential relaxation, although not known by that name, is frequently taught by the use of exercises in oratory, singing and piano playing and in dancing. In experiments on twenty-one subjects who had not previously been training to relax, it was found that continuous reading or writing of numbers or copying generally permitted sufficient relaxation of the mechanism of the jerk to register definite decrease in its amplitude during the course of the period. Decrease of jerk tended to be prevented by whatever seemed to have a stimulating effect, including exciting conversation, noises, disturbance by the investigator. It is generally possible to prevent the diminution of the knee jerk in trained subjects during a prolonged test by instructions not to relax. Differential relaxation apparently means the absence of an undue degree of contraction in the muscles employed for an act or for posture, while other muscles, not so required, are flaccid.

Gall Bladder Hormone.

IT is well known that impure solutions of secretin promote the excretion of bile from the gall bladder. A. C. Ivy and E. Oldberg (*American Journal of Physiology*, October, 1928) have performed several series of experiments which, they believe, prove that a hormone mechanism is concerned in gall bladder contraction and evacuation. An extract prepared from the upper intestinal mucosa on intravenous injection caused contraction of the gall bladder. The extract was free from vaso-dilatin and had no objective toxic effect on unanæsthetized dogs. Cross circulation experiments show that when acid is injected into the duodenum, something gets into the blood which causes the gall bladder to contract. They propose the name "cholecystokinin" for the supposed hormone. The injection of the following substances into the duodenum of the dog caused the gall bladder to contract with the animal under light barbital-ether anæsthesia: one-tenth normal hydrochloric acid, butter, digested egg yolk, cream and olive oil, butyric acid, 5% soap solution. Undigested olive oil, egg yolk and cream were ineffectual.

BIOLOGICAL CHEMISTRY.

Iron in Nutrition.

E. B. HART, H. STEENBOCK, J. WADDELL AND C. A. ELVEHJEM (*The Journal of Biological Chemistry*, May, 1928) continuing their investigations on the anæmia in rats, have found that an Eli Lilly and Company preparation from liver used in the treatment of pernicious anæmia in man was also effective in the cure of the anæmia in rats kept on a whole milk diet supplemented with iron. The ash obtained from the Lilly preparation was also active. A trial was made of a copper salt. This fitted into the scheme of testing all supplementary inorganic elements which have been recognized in biological materials. Its immediate use was suggested by the fact that a pale blue colour had often been noticed in the ash of some of the materials studied, especially in the ash of lettuce and of the Eli Lilly preparation. Copper is known to exist as an integral part of the compound hæmocyanin which functions as the respiratory pigment in molluscs and crustaceæ. The response to a preliminary experiment with copper sulphate was surprising and then further experimental work was undertaken. The animals which received 0·05 milligramme and 0·1 milligramme of copper, had a very rapid recovery with normal hæmoglobin value. Those which received only 0·01 milligramme of copper, soon manifested considerable increases of hæmoglobin with a final return to normal. The authors also showed that all the active extracts contain copper. Three hundred grammes of fresh ox liver (approximately the amount recommended in the Minot-Murphy diet) contain about four milligrammes of copper, while three hundred grammes of fresh calf's liver contain about thirty milligrammes of copper. Six vials of the Eli Lilly preparation used in these experiments in the daily dosage recommended would contain about four milligrammes of copper. The authors believe that their work emphasizes the necessity for the intensive study of the effects of small amounts of inorganic substances in the diet.

J. WADDELL, C. A. ELVEHJEM, H. STEENBOCK AND E. B. HART (*The Journal of Biological Chemistry*, May, 1928) have been able to produce a profound nutritional anæmia in young rats. Young rats, when weaned at three to four weeks of age and placed on a diet of cow's whole milk, develope in several weeks a profound anæmia with low hæmoglobin values. After six to nine weeks of this diet the majority of the animals succumbs. Studies were made of the factors operating in the cure and prevention of the anæmia. Evidence is presented showing that inorganic iron salts (chloride, sulphate, acetate, citrate and phosphate) when given in sufficient quantities to introduce 0·5 milligramme of iron six times per week, fail to increase the hæmoglobin value in these animals, but that the ashed residues from dried beef liver, dried lettuce and yellow corn and acid extracts of the same, when given in sufficient quantity to produce the same amount of iron, were effective in curing the anæmia. These results are explained by assuming that the ashes and the ash extracts contain some other organic substance or substances, as well as the iron, which are concerned in the formation of hæmoglobin.

Non-fermentable Reducing Substances of Blood.

ISRAEL MORDECAI RABINOWITCH (*The Biochemical Journal*, Volume XXII, Number 3) has attempted to determine whether the non-fermentable reducing substances of the blood are of any significance in diabetes. He determined the amounts of these substances in blood from diabetic patients; the values varied between sixteen and thirty-one milligrammes per hundred cubic centimetres. There were no significant differences noted between the blood from normal and diabetic persons either in the fasting state or after glucose ingestion. The values for the individuals were remarkably constant and did not vary with different sugar levels. After "Insulin" administration the concentrations of the non-fermentable reducing substances were not altered, though the reducing fermentable sugar was reduced to zero. Similar observations had been made by Hiller, Linder and Van Slyke in normal rabbits. Full details of the method used are given. Arterial and venous blood sugar curves obtained simultaneously were identical in normal and diabetic subjects as far as variation of non-fermentable reducing substances was concerned. The author suggests that in view of these findings the metabolism of non-fermentable substances is not disturbed in diabetes. This is not in agreement with the findings of Folin.

The Blood Cholesterol in Nephritis.

JAMES MAXWELL (*The Quarterly Journal of Medicine*, January, 1928) has investigated the cholesterol content of the blood plasma of 181 patients with nephritis over a period of eighteen months. The technique followed was that of Myers and Waddell, modified by MacAdam and Shiskin. Ten normal individuals were investigated, the maximum and minimum values found in the plasma being 0·20% and 0·13% with an average of 0·17%. The patients with nephritis were divided into groups as follows: Those with acute nephritis, both active and quiescent, twenty-two in number; those with chronic parenchymatous nephritis, thirty in number; those with chronic interstitial nephritis and arterio-sclerosis, thirty-four in number; those with toxæmia of pregnancy, sixteen in number; those with uræmia, twenty-four in number. The author does not employ the term nephrosis. He found that in acute nephritis with œdema the plasma cholesterol is raised in degree proportionate to the amount of the œdema. The persistence of the plasma cholesterol above the upper normal limit foretells a chronic course of the disease, probably terminating in uræmia, as during the recovery stage the œdema first clears up, the cholesterol next returns to normal and then usually becomes subnormal for a short time and lastly the albumin practically disappears from the urine. In acute nephritis without œdema there is no diagnostic or prognostic value in the blood cholesterol. In chronic parenchymatous nephritis high cholesterol values are found and the amount of cholesterol increase is not proportional to the degree of œdema. Renal œdema and the increased plasma cholesterol are not related as cause and effect. The author suggests that they are probably both the result of a toxic process acting on the tissue cells, particularly those of the reticulo-endothelial system. This idea is supported by the occurrence of intense localized œdema in some of the patients. In uræmia the plasma cholesterol was usually either normal or low and a persistently raised plasma cholesterol in patients who have been œdema-free for a long period, is often associated with the early onset of uræmia. In the toxæmias of pregnancy a toxic factor frequently causes lower plasma cholesterol figures than would otherwise have been expected. In pure chronic interstitial nephritis the cholesterol is always normal or low, but in primary arterio-sclerosis higher figures are usually found. Unless arterio-sclerosis or some other factor was also present, the œdema of heart failure was not associated with any increase in the blood cholesterol.

British Medical Association News.

SCIENTIFIC.

A MEETING OF THE NORTHERN DIVISION OF THE TASMANIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the General Hospital, Launceston, on June 7, 1928.

The Treatment of Fractures.

DR. C. CRAIG read a paper entitled: "A Series of Fractures of the Long Bones Treated by the Methods of R. Hamilton Russell" (see page 808).

DR. W. P. HOLMAN said that when he was a resident medical officer he had suffered from an over-conscientiousness in the application of standard treatment. In fractured tibiæ and fibulæ he had had the foot at a right angle and in fractures of the humerus he had had the arm fully abducted with weight extension. He had not been able to understand difficulties thus created until he had been enlightened by Mr. Hamilton Russell.

DR. J. R. RAMSAY said that the essence of Mr. Russell's methods was a knowledge of position. As long as the value of position was realized, even poorly devised splints could be used. He had frequently noticed in setting a fracture that the bones fell into place better in one position than in another. This was the position in which to treat them.

DR. G. E. CLEMONS said he was glad that stress had been laid on active as opposed to passive movement. As a boy he had had a fractured elbow and had had to submit to the torture of passive movement.

DR. A. PRYDE said the series had finally converted him to Mr. Russell's views. Success in treatment of fractures evidently lay in a knowledge of the position of rest.

ANNUAL MEETING.

THE ANNUAL MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Rooms, Adelaide Street, Brisbane, on December 14, 1928, DR. EUSTACE RUSSELL, the President, in the chair.

Welcome to Sir John Goodwin.

The President extended a hearty welcome to His Excellency Sir John Goodwin. Sir John in reply regretted that he had been unable to attend more meetings of the Branch. He assured the members of his interest in their affairs.

ANNUAL REPORT OF COUNCIL.

The annual report of the Council was taken as read and adopted on the motion of Dr. E. S. Meyers, seconded by Dr. Mervyn Patterson.

The Honorary Treasurer presented the financial statements which were adopted (see pages 832-4).

THE Council has pleasure in presenting the following report of the work of the Branch for the year ended November 15, 1928.

Membership.

The membership of the Branch which was 450 at the end of last year has increased to 460. The additions have been: Elections of new members 15, transferred from other Branches 28. The losses have been: Transferred to other Branches 23, unfinancial 3, resigned 5, deaths 2, which show a net increase of 10.

The Council regrets to record the deaths of the following members: Dr. Noel L. Anderson and Dr. A. A. Parry.

Meetings.

General.

Ten ordinary general meetings were held during the year exclusive of the annual meeting, the average attendance being 41. This included one clinical meeting, which was held at the Brisbane Hospital in February, and the Bancroft Memorial Lecture.

Four extraordinary meetings were held as follows:

January 20, paper by Dr. G. W. F. Paul on Professor Blair Bell's theory of cancer and treatment by means of colloidal lead; March 21, paper by Dr. R. Marshall Allan, Director, Obstetric Research Committee, Melbourne—"Some Aspects of Maternal Mortality"; April 11, consideration of the question of new premises for the Branch; July 20, adoption of new by-laws. The average attendance at the special meetings was 27.

Council.

The Council held twenty-two ordinary and nine special meetings. Four of the special meetings were held to consider lodge matters and four were in connexion with the national (medical) insurance bill. One meeting was held to consider the developments in hospital matters in Brisbane. The record of attendance of members of the Council was as follows:

	Ordinary.	Special.
DR. EUSTACE RUSSELL (President) ..	21	9
DR. MERVYN S. PATTERSON (President Elect)	16	3
DR. H. V. FOXTON (Past President) ..	19	3
DR. E. S. MEYERS (Honorary Secretary)	21	9
DR. F. A. HOPE MICHOD (Honorary Treasurer)	20	4
DR. L. J. J. NYE (Assistant Honorary Secretary)	22	6
DR. NEVILLE G. SUTTON (Honorary Librarian)	18	6
DR. M. GRAHAM SUTTON (Honorary Curator Museum)	16	7
DR. W. N. ROBERTSON (Federal Committee Representative)	13	6
DR. E. SANDFORD JACKSON (Federal Committee Representative)	14	7
DR. D. GIFFORD CROLL (Councillor) ..	19	4
DR. C. M. LILLEY (Councillor)	19	7
DR. S. F. MCDONALD (Councillor) ..	18	7
DR. VAL. MCDOWALL (Councillor) ..	15	6
DR. ALEX. MURPHY (Councillor)	18	9
DR. H. W. TILLING[1] (Councillor)	14	5
DR. D. E. TRUMPY (Councillor)	19	2
DR. B. L. W. CLARKE[2] (Councillor) ..	6	—

Dr. F. A. Hope Michod was again appointed Chairman of Committees. It was thought advisable by the Council to appoint an assistant honorary secretary whose special duty would be to look after the subcommittees and Dr. L. J. J. Nye was elected to fill the position.

Honorary Secretary.

Dr. E. S. Meyers, who has been Honorary Secretary of the Branch since 1926, is relinquishing the position at the end of the year. He has been a most energetic officer and the Council would like to place on record its high appreciation of his services during a very strenuous period.

In accordance with the old rules of the Branch the Honorary Secretary was appointed by the Council from amongst the elected members. In view of the fact that at some period it might occur that there would be no suitable member of the Council willing to undertake this position, it was thought advisable to make provision in the new rules for the election of the Honorary Secretary by the members of the Branch. This method has been adopted in connexion with the present election.

Papers.

February 4.—Clinical Meeting, Brisbane Hospital.
March 2.—Dr. H. S. McClelland: "The Gall Bladder in Health and Disease."
April 5.—Mr. Victor Bonney (London): Lecture on gynæcological and obstetrical subjects.
May 4.—Dr. Charles E. Wassell: "A Few Notes Concerning a Trip Overseas."

[1] Resigned on July 27, 1928, owing to departure abroad.
[2] Elected July 27, 1928.

June 1.—Dr. C. A. Thelander: "Surgical Technique of the Pelvis."

July 6.—Combined paper by Mr. E. W. Haenke, Dr. L. St. Vincent Welch and Dr. Jefferis Turner on "Dental Infection and Treatment of Children." Members of the dental profession were also present at this meeting.

August 3.—Bancroft Memorial Lecture delivered by Professor Wm. Colin MacKenzie: "Functional Anatomy and Medical Practice." Illustrated by still and moving pictures.

September 7.—Dr. R. Graham Brown: "Notes on Clinics in Europe and America."

October 5.—Dr. B. L. W. Clarke: "X Ray in the Treatment of Exophthalmic Goître."

November 2.—Dr. E. S. Meyers: "Consideration of Some of the Literature and Personal Experience in the Treatment of Gastro-Enteroptosis."

The subcommittee responsible for arranging the programme of papers were Dr. Alex. Murphy, Dr. L. J. Nye and Dr. C. M. Lilley.

A number of interesting cases and specimens were also exhibited at the various meetings and the majority of papers were illustrated by lantern slides.

Mr. George Hancox has been appointed Honorary Lanternist of the Branch and his services during the year have been much appreciated.

Representation.

The Branch was represented as follows:

Council of the British Medical Association: Sir T. Jenner Verrall, elected for the period 1928-1931.

Representative Body: Dr. Arthur Murphy.

Annual Meeting of the British Medical Association, Cardiff, July, 1928, Delegates: Dr. L. M. McKillop and Dr. Ellis Murphy.

Federal Committee of the British Medical Association in Australia: Dr. E. Sandford Jackson and Dr. W. N. Robertson.

Australasian Medical Publishing Company, Limited: Dr. W. N. Robertson (Chairman), Sir David Hardie, M.D., and Dr. J. Lockhart Gibson (Members).

Bush Nursing Council: Dr. N. W. Markwell.

Australasian Association for the Advancement of Science, 1928: Dr. J. V. Duhig.

Committee of Direction, Cancer Campaign: Dr. E. S. Jackson, Dr. Val. McDowall, Dr. E. D. Ahern, Dr. J. B. McLean, Dr. A. T. Nisbet, Dr. E. S. Meyers, Dr. Eustace Russell.

Museum.

At the suggestion of the Curator of the Museum, Dr. M. Graham Sutton, a request has been made to the Acting Commissioner of Health for the pathological specimens at present housed at the Health Department. The matter is under consideration.

Library.

Apart from the ordinary periodicals, the only additions which have been made to the Library during the year were the *Quarterly Cumulative Index Medicus* and *The Journal of the College of Surgeons of Australasia.*

Dr. R. H. Todd, on behalf of the Federal Committee, forwarded photographs of three letters which had been written by Lord Lister in 1887 (two) and 1894.

Photographs of Past Presidents.

So far we have received twenty-three photographs of past presidents of the Branch. There is still a number to come, including several of the more recent holders of the position and the Council would be glad to receive the photographs as soon as possible to complete the set to date.

Affiliated Local Associations.

The following is a list of the Local Medical Associations:

Downs and South Western (Toowoomba): President, Dr. J. S. Smyth (Warwick); Honorary Secretary, Dr. A. J. Spencer Roberts (Toowoomba).

West Moreton Medical Association (Ipswich): President, Dr. J. A. Cameron; Honorary Secretary, Dr. G. H. Brandis. Membership 19. Two meetings were held during the year.

Maryborough: Honorary Secretary, Dr. W. Gilbee Brown.

Bundaberg: Honorary Secretary, Dr. Egmont Schmidt. Membership eight.

Rockhampton: Honorary Secretary, Dr. J. Bruce Gordon. Two meetings were held during the year. Membership fourteen.

Townsville: President, Dr. A. Breinl; Honorary Secretary, Dr. L. P. Brent. Owing to their departure from Townsville Dr. T. G. Ross retired from the position of President and Dr. A. Baldwin and Dr. A. A. Moon from the Honorary Secretaryship. Eight meetings were held during the year and at a special meeting of the Association, Dr. E. Sandford Jackson and Dr. A. T. Nisbet (Brisbane) addressed the members on the Queensland cancer campaign. Several interesting papers have been read and cases exhibited by the various members. Mr. F. North, solicitor, read a paper on medico-legal problems. Membership fifteen.

Cairns: Honorary Secretary, Dr. P. S. Clarke.

Central Western, Longreach: Honorary Secretary, Dr. C. V. Watson Brown.

Western, Charleville: Honorary Secretary, Dr. A. W. Fox.

Federal Committee.

Two meetings of the Federal Committee of the British Medical Association in Australia were held during the year, the Branch being represented thereat by Dr. W. N. Robertson and E. Sandford Jackson. Reports of the proceedings will be found in THE MEDICAL JOURNAL OF AUSTRALIA.

Australasian Medical Congress (British Medical Association), Third Sesssion, Sydney, 1929.

The third session of the Australasian Medical Congress (British Medical Association) will be held in Sydney from September 2 to 9, 1929. Sir Alexander MacCormick will be the President. Dr. E. S. Meyers has been appointed to the position of Honorary Local Secretary for Queensland.

The fee for the Congress is £2 2s. (*plus* bank exchange) and further particulars will be supplied to members later.

Contract Practice.

The chaotic conditions of lodge contract practice in Queensland was primarily responsible for the introduction of a Federal model lodge agreement and since the adoption of this agreement by the Branch, it has been decided to introduce it or a suitable modification throughout the State as soon as present arrangements permit. Already this has been satisfactorily accomplished in certain towns and districts in Queensland.

Early in the year it was decided that with certain modifications this agreement should govern lodge contract practice in the metropolitan area. Though strenuous resistance was made by the majority of the friendly societies to its introduction, after a short time its many advantages and the service available under it has won over the majority of the lodges affected to its acceptance. The present indication is that in the near future it will be accepted by all friendly society lodges in the metropolitan area.

In its introduction an important departure has been made in the conduct of lodge practice. In future contracts may not be entered into between members and individual lodges, but between members and a central body, namely, the Friendly Societies' Medical and Hospital Council, with which the lodges have affiliated; this body has contracted to deal only with members of the Queensland Branch of the British Medical Association and there shall be freedom of choice of any medical officer contracting with this body by any lodge member.

A lodge section was formed during the year and its duties will be to consider all matters relating to lodge or contract practice and advise the Council thereon.

A Queensland medical practitioners' emergency fund was instituted to assist any possible cases of hardship during the introduction of the new agreement, but happily no necessity has yet arisen for it to function.

A splendid spirit of cooperation and determination has animated all members holding lodge appointments, thus permitting of the introduction of the new agreement into the metropolitan area with a minimum of hardship and friction.

Subcommittees.

Special Lodge.

Personnel.—Special subcommittee appointed to deal with the model lodge agreement: Dr. G. H. Brandis, Dr. A. B. Carvosso, Dr. D. Gifford Croll, Dr. F. G. Meade, Dr. G. A. Sampson, Dr. M. Graham Sutton, Dr. J. L. Selwood, Dr. D. V. Sheil, Dr. A. B. Stark, Dr. L. W. Gall, Dr. Kenneth Wilson, Dr. D. A. A. Davis, Dr. F. W. R. Lukin and Dr. C. E. Tucker (Honorary Secretary).

Hospital.

Personnel.—Dr. E. S. Jackson, Dr. Gifford Croll, Dr. V. McDowall, Dr. C. M. Lilley (Honorary Secretary and Convener).

Ten meetings of this subcommittee were held during the year, when various matters were considered and reports made to the Council.

Rules Issued by Home Secretary's Department for Public Hospitals.— On June 23, 1927, the Home Secretary's Department issued a copy of draft rules to the various country public hospitals, which were based to a large extent on the hospital policy drawn up by this Branch. Objection, however, was raised by the Council to a number of the rules, notably:

(i) Holding medical practitioner responsible for hospital maintenance fees of patients who enter the private ward.

(ii) The charge of £7 7s. per fortnight for maternity cases in hospital, the doctor not being entitled to make any charge for his services to such patients.

(iii) Honorary medical officers being excluded from hospital boards.

After a great deal of negotiation between the President and the Minister, an intimation was received from the Home Secretary's Department in July stating that it had been decided to delete the rule requiring that the medical practitioner shall be responsible to the committee for payment of hospital charges of private patients and that the hospital committee shall accept the responsibility of collecting and recovering hospital charges. It was also mentioned that the Department will take action in any case where a medical practitioner has exploited or attempted to exploit the hospital.

Maternity Ward Fees.—The Home Secretary's Department also forwarded copy of a letter which had been sent to all hospitals in the State at which a maternity ward has been established, informing them that the prescribed rate of £7 7s. per fortnight is for patients in the public wards and that patients accommodated as private patients are required to pay such charges as the committee may determine, the medical practitioner having the right to charge a fee to a private patient, the amount being a private matter between the doctor and the patient.

It is satisfactory to note that the Home Secretary's Department realized the position with regard to persons in a position to pay, being treated in private wards of country public hospitals and members of the Branch are urged to take a firm stand with their committees in this matter.

Brisbane Hospital, New Block.—On August 31 a deputation waited upon the Home Secretary with regard to the new block to be erected at the Brisbane Hospital and requested that the Medical Advisory Board of the Brisbane and South Coast Hospitals Board be consulted on the whole details of the hospital plan. This action was taken in order to avert mistakes being made in the building from a medical point of view, which, in the opinion of many members of the medical profession, had occurred in the first block. The Home Secretary promised to recommend to the Brisbane and South Coast Hospitals Board that the Medical Advisory Board be consulted with regard to the building.

As usual many hospital matters concerning individual members have been dealt with and all the assistance possible under the circumstances was rendered.

Public Health.

Personnel: Dr. H. V. Foxton, Dr. S. F. McDonald and Dr. H. W. Tilling (Convener and Secretary). Six meetings were held during the year.

Fatalities Associated with the Use of Diphtheria Toxin Antitoxin at Bundaberg.—A letter was sent to the Mayor requesting that the City Medical Officer of Health (Dr. Tilling) be allowed to attend any inquiry into the deaths of Bundaberg children in view of the fact that the Queensland Branch of the British Medical Association has interested itself in the campaign being carried on by the city authorities against diphtheria. This request was granted and Dr. Tilling's exhibits and report were forwarded to the Royal Commission which had been appointed to inquire into the disaster.

This disaster was the means of the diphtheria immunization campaign being discontinued.

The report of the Royal Commission of Inquiry has been published and at the last Federal Committee meeting a statement was made by the Federal Minister, Sir Neville Howse to the effect that he would make a personal examination of the whole of the scientific aspects of the report.

The sympathy of the Branch was expressed to Dr. Ewing G. Thomson of Bundaberg, who performed the inoculations. The members of the Council would like to place on record how deeply they sympathize with Dr. Thomson in the unfortunate occurrence and in doing so are sure that the feelings of the whole of the members of the Branch are being expressed.

City Medical Officer of Health, Brisbane.—In June the position of City Medical Officer of Health was abolished. To protest against this action being taken a deputation of interested bodies, including representatives of the Branch. waited on the Mayor and put before him their views on the subject.

The Mayor promised to put the views of the deputation before the Greater Brisbane Council, but there was no evidence to show that he did so.

It was decided by the Greater Brisbane Council to abolish the position of a full-time city medical officer of health for Brisbane and at present the work is being carried out by a part-time medical officer. No applications were called for the position of part-time medical officer of health by advertisement.

Building.

Personnel: Dr. Eustace Russell, Dr. E. S. Meyers, Dr. D. Gifford Croll, Dr. C. A. Thelander and Dr. F. A. Hope Michod.

In March an offer was made to the Council of a property on Wickham Terrace known as "Bay View" for the sum of £4,500, the action of the Council in purchasing the property being approved at a special meeting of the Branch held on April 11. At an extraordinary meeting of shareholders of the Queensland Medical Land Investment Company, Limited, held on May 2, it was decided that the Queensland Branch of the British Medical Association should be allowed to purchase the shares of the company for the face value. This was in accordance with the Memorandum and Articles of Association of the Company. The shareholders of the company were circularized to this effect and they were requested to transfer their shares to the Branch for the face value and lend the amount to the Branch to carry interest at the rate of 7% *per annum*. The total amount transferred to the Branch to date is £1,625.

An amount of £3,375 has also been subscribed by members by way of loan to the Branch to enable the Council to finance a building scheme and a circular letter soliciting assistance in this connexion was sent to members in July. The response so far from country members has not come up to expectations. Interest at the rate of 7% will be paid on the amount loaned.

The property on Wickham Terrace includes a two-storied house, which is at present being run as a boarding house, the tenant having signed a lease for two years.

In taking this step with a view to acquiring more suitable premises, the Council has sought the advice of legal and financial experts.

The Branch is now in possession of an excellent site for the erection of a suitable building and the future of the scheme is in the hands of the members.

Rules and Ethical.

Personnel: Dr. M. S. Patterson and Dr. D. E. Trumpy.

Much useful work has been done by this subcommittee, in addition to supervising the draft of the new by-laws of the Branch.

Articles of Association and New By-laws.—The Articles and Association and new by-laws have now been circulated to members.

The articles are based on the model articles of Association for Branches in Australia proposing to incorporate and were duly approved by the Council of the British Medical Association.

Much time and thought has been expended in revising the new by-laws which were finally adopted at an extraordinary meeting of the Branch which was held on July 20.

Post-Graduate Subcommittee.

Honorary Secretaries: Dr. S. F. McDonald and Dr. Neville G. Sutton.

So far as post-graduate teaching has been concerned we have been very fortunate.

In the first place we had the good fortune of Mr. Victor Bonney's visit. He spent an evening with the Branch, which at his own suggestion was devoted to answering questions. This might easily form a precedent for another occasion, as it was a most instructive and enjoyable evening.

In the post-graduate week we were especially fortunate. Mr. H. B. Devine, of Melbourne, offered to give a series of lectures on surgical problems; he proposed, planned and carried out the course entirely on his own initiative and lectures and demonstrations were enthusiastically attended.

For the actual course Dr. H. Douglas Stephens delivered three lectures and performed some surgical operations. Lecture room and operating theatre were packed and he spoke and demonstrated for as much as two hours on end. He dealt with the simple everyday problems of pædiatrics and his lectures were patterns of good post-graduate teaching.

To the administrative heads of the Brisbane and South Coast Hospitals Board hospitals and of the *Mater Misericordiæ* Hospital, we are greatly indebted for their most whole-hearted cooperation. Our thanks are also due to the Senate of the University for placing the Geology Theatre at the disposal of the Committee for lectures.

The week was concluded by the Bancroft Memorial Lecture delivered by Professor Wm. Colin MacKenzie, which for charm of matter and scientific fascination made a fitting climax to an excellent week.

It is regretted that our funds probably will not allow us at present at any rate to join with the Branches in the other States in securing visits from overseas lecturers.

Thus this year Melbourne has had five lectures from Professor Fraser, of London and next year a series by Professor Hugh MacLean, of London.

The post-graduate course will be held next year in May, in order to avoid clashing with the Australasian Medical Congress.

The membership of the course this year numbered 87.

Bancroft Memorial Lecture.

The annual Bancroft Memorial Lecture was delivered on August 3 by Professor Wm. Colin MacKenzie, of Melbourne, who chose for his subject "Functional Anatomy and Medical Practice." The lecture was illustrated by still and moving pictures. The Queensland University Senate kindly placed the Geology Theatre of the University at the disposal of the Branch. There were seventy members present and invitations were also extended to the professional staff of the University, the Council of the Royal Society and Mr. Heber A. Longman, Director of the Museum.

Bancroft Memorial Medal.

At the conclusion of the lecture, the President presented the Bancroft Memorial Medal to Professor MacKenzie. He mentioned that the medal, the work of which had been entrusted to Miss Daphne Mayo, had only just been completed and it was therefore the first one to be presented.

The President of the New South Wales Branch of the British Medical Association was requested to present on our behalf similar medals to Professor J. C. Windeyer and Dr. J. L. McKelvey, who were the Bancroft Memorial Lecturers for 1926 and 1927 respectively, the presentation taking place at the meeting of the New South Wales Branch which was held on September 27. Our thanks are due to Dr. Barling for kindly carrying out this commission for us.

Sections for Special Branches of Medical Knowledge.

Eye, Ear, Nose and Throat Section.

Inaugurated July, 1924.

Chairman, Dr. W. N. Robertson; Honorary Secretary, Dr. Walter Lockhart Gibson. Membership 19. The section has held four meetings during the year. A number of interesting cases were shown and members entered freely into the discussions.

Surgical Section.

Inaugurated February, 1927.

President, Dr. G. P. Dixon; Honorary Secretary and Treasurer, Dr. Milton Geaney. Membership 28. Quarterly Meetings were held during the year, at which interesting papers were read and discussed.

Obstetrical Section.

Inaugurated November 15, 1927.

President, Dr. D. Gifford Croll; Executive, Dr. A. H. Marks, Dr. A. C. F. Halford and Dr. F. A. Hope Michod; Honorary Secretary, Dr. K. Wilson. Membership, 27. Meetings were held in April, July and October.

Medical Section.

Inaugurated June 1, 1928.

President, Dr. Eustace Russell; Honorary Secretary, Dr. T. H. R. Mathewson; Members of Committee, Dr. J. V. Duhig, Dr. S. F. McDonald, Dr. L. J. J. Nye.

It was arranged to hold meetings quarterly.

A meeting was held on July 14 at which there were fourteen members present. Dr. Duhig read a paper entitled "The Protein Factor in the Diabetic Dietary," in which he gave an account of the investigation into this subject carried out by himself and Miss M. Fitzgerald, D.Sc.

At the meeting held on October 15 there were fourteen members present. Dr. N. W. Markwell read a paper entitled "The Electrocardiograph in General Practice."

Miscellaneous.

The annual dinner which was held at the Bellevue Hotel on August 2 was a great success, about seventy members being present. The guests of honour were Professor Wm. Colin MacKenzie, Mr. H. B. Devine, Dr. H. Douglas Stephen and the Home Secretary, the Hon. James Stopford, M.L.A.

An apology was received from His Excellency, Sir John Goodwin, who was unavoidably prevented from being present.

A very enjoyable programme was given by Messrs. R. L. Wishart, E. J. England and Eric Hayne, who were also the guests of the Branch. Dr. C. F. A. de Monchaux acted as pianist.

The arrangements for the dinner were in the hands of Dr. F. A. Hope Michod and Dr. C. F. A. de Monchaux was responsible for the programme.

On Monday, July 30, a dance and bridge evening was held at Rowe's Banquet Hall in connexion with the opening of the post-graduate course. Those present numbered about one hundred, including members and their friends and a very enjoyable evening was spent. Dr. M. Graham Sutton and Dr. V. N. B. Willis were responsible for the arrangements.

Prior to the Bancroft Memorial Lecture on August 3, the President entertained the members of the Council and southern visitors at dinner.

National (Medical) Insurance.

The matter of the National Insurance Bill has been closely watched by the Council and two conferences were held with the Federal Treasurer, Dr. the Honourable Earle Page, on the subject. Dr. Page kindly explained the position and received the views of the Council with regard to the bill. The bill has now passed its second reading and will be considered by the new Federal Parliament in due course.

It is of the utmost importance that the Branch should carefully watch proceedings in regard to the final stage of the bill and in this connexion close contact is being kept with the Branches in the other States, especially with Victoria.

Death Certificate Forms.

This matter was brought up by one of our country members, who took exception to the request made by the Registrar-General's Department printed at the foot of the death certificate forms, *videlicet*, that medical men should state whether cause of death was accidental, suicidal or homicidal. He contended that such a statement could be determined only by a coroner or a duly constituted court of inquiry after weighing the evidence in a case of death by violence.

This question was taken up with the Registrar-General who promised to have a memorandum printed and placed in the cover of each book of medical certificates issued to doctors, asking them to give the information (*id est*

QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION (INCORPORATED).

Balance Sheet as at November 15, 1928.

LIABILITIES.	£ s. d.	£ s. d.
British Medical Association, London		10 4 0
Australasian Medical Publishing Company, Limited		10 0 0
English, Scottish and Australian Bank, Limited, Brisbane—		
Balance owing on purchase of "Bayview," Wickham Terrace, Brisbane	1,875 0 0	
Interest accrued to November 15, 1928	23 14 4	
		1,898 14 4
Loans from Members, repayable May 15, 1943	5,000 0 0	
Interest accrued to November 15, 1928	205 7 2	
		5,205 7 2
Accumulation Fund		971 9 0
		£8,095 14 6

ASSETS.	£ s. d.	£ s. d.
B.M.A. Rooms, Adelaide Street, Brisbane—		
Library, Book Cases, Furniture, Lantern, Typewriter *et cetera*		283 0 0
Museum Specimens		5 0 0
Queensland Medical Land Investment Company, Limited—		
4,555 shares of £1 each, paid up to 10s. each—at cost		2,277 10 0
Freehold Property, "Bayview," Wickham Terrace, Brisbane—		
Land, area 31§ perches	1,500 0 0	
Improvements, two storied wood residential building (*less* depreciation to November 15, 1928, at 5% *per annum*)	2,415 0 0	
		3,915 0 0
Furniture in "Bayview"—		
Purchased March 10, 1928, for	500 0 0	
Less Depreciation to November 15, 1928, at 10% *per annum*	35 0 0	
		465 0 0
Australasian Medical Publishing Company, Limited, Sydney—		
Two Debentures of £25 each		50 0 0
Deputy Commissioner of Taxation—		
Deposit lodged on appeal *re* Federal income tax		2 0 0
Cash at Banks and in Hand—		
General Fund—		
National Bank of Australasia, Limited, Brisbane	173 1 1	
Commonwealth Government Savings Bank, Brisbane	274 9 2	
Cash in hand	6 18 0	
	454 8 3	
Building Fund—		
Credit Balance, Commonwealth Bank of Australia, Brisbane, Savings Bank Department, a/c No. S1879	643 16 3	
		1,098 4 6
		£8,095 14 6

I have examined the above balance sheet and have obtained all the information and explanations I have required. In my opinion the balance sheet is properly drawn up so as to exhibit a true and correct view of the state of the Association's affairs as at November 15, 1928, according to the best of the information and explanations given me, and as shown by the books of the Association.

ROY G. GROOM, *Auditor.*
(Fellow of the Australasian Corporation of Public Accountants.)

Brisbane, November 22, 1928.

F. A. HOPE MICHOD, *Honorary Treasurer.*

cause of death) in a subsidiary way by endorsing some portion of the certificate other than that reserved strictly for the cause of death. A request was then made by the Council that a perforated slip be used to supply the information as to whether cause of death was accidental, suicidal or homicidal, which would not be available to the police. It was pointed out that the trouble generally arises owing to the police being in close contact with the offices of the clerks of petty sessions in most country towns. As this method did not appeal to the Registrar-General, it was further suggested that the difficulty might be overcome if he would issue instructions to the district registrars that when copies of death certificates are required for police purposes, no subsidiary information relating to cause of death should be given. This matter is still under consideration.

Statement of Receipts and Payments (General Fund) for Twelve Months Ended November 15, 1928.

RECEIPTS.	£ s. d.	£ s. d.
November 16, 1927.		
To Cash at Banks and in Hand—		
Credit Balance, Commonwealth Government Savings Bank, Brisbane	325 11 8	
Cash in Hand	3 8 11	
	329 0 7	
Less Debit Balance, National Bank of Australasia, Limited, Brisbane	16 1 11	
		312 18 8
November 15, 1928.		
To Subscriptions—		
For remittance to British Medical Association, London	583 19 0	
For remittance to THE MEDICAL JOURNAL OF AUSTRALIA, Sydney	561 5 6	
Queensland Branch subscriptions	259 0 6	
Organization Fund, Queensland Branch	678 11 6	
		2,082 16 6
„ Dividends and Interest—		
Queensland Medical Land Investment Co., Ltd.—Dividend for Year ended November 25, 1927: 6% on 1,305 shares paid to 10s. each	39 3 0	
Commonwealth Government Savings Bank—Interest on Current Account to June 30, 1928	9 14 6	
		48 17 6
„ Subscriptions to Annual Dinner		70 7 0
„ Sundry Receipts—		
Hire of Lantern and Balopticon	4 1 0	-
Refund of unused portion of grant made to Curator of Museum on March 30, 1921	7 5 0	
		11 6 0
		£2,526 5 8

PAYMENTS.	£ s. d.	£ s. d.
November 15, 1928.		
By British Medical Association, London—		
Remittances on Account of Subscriptions, 1927 and 1928		608 2 3
„ Australasian Medical Publishing Company, Limited—		
Payments for THE MEDICAL JOURNAL OF AUSTRALIA, 1927 and 1928		576 15 6
„ Library Expenditure—		
Books, Journals and Bookbinding		57 5 4
„ Branch Expenses—		
Office Salaries and Honorarium	309 4 0	
Printing and Stationery	69 3 5	
Electric Light	16 5 7	
Rent	52 0 0	
Cleaning	45 0 0	
Telephone	25 7 8	
Bank Charges £11 9 7		
Less Exchanges refunded 6 10 9		
	4 18 10	
Stamps and Telegrams	44 15 1	
Audit Fees to November 15, 1927	12 12 0	
Expenses Federal Committee	18 18 0	
Insurance: Fire, Workers' Compensation and Unemployment	2 17 7	
Legal Costs	2 2 0	
Advice *re* Taxation	2 2 0	
Renewals of Office Furnishings	7 10 7	
Lantern Operator	4 0 0	
Federal Income Tax, 1926 and 1927	0 15 0	
Council Meeting Expenses, Newspapers and Sundries	20 2 7	
Subscription Town Planning Association	2 2 0	
Subscription Australasian Association for the Advancement of Science	1 0 0	
		640 16 4
„ Expenses in connexion with Lodge Agreement and Dispute		128 12 7
„ Annual Dinner Expenditure		58 5 5
„ Deputy Commissioner of Taxation—Deposit on Appeal *re* Federal Income Tax		2 0 0
„ Cash at Banks and in Hand—		
National Bank of Australasia, Limited, Brisbane	173 1 1	
Commonwealth Government Savings Bank, Brisbane	274 9 2	
Cash in Hand	6 18 0	
		454 8 3
		£2,526 5 8

Post Mortem Examinations.

A request was made to the Home Secretary to the effect that the medical practitioner who has been attending the case should be allowed to attend the *post mortem* examination, upon making application to the Government Medical Officer. The views of the Commissioner of Police were obtained by the Minister and subsequently a reply was received granting our request. It was also stated that the Minister has approved that, in cases where a difference of opinion may arise between medical practitioners as a result of a *post mortem* examination, and which might subsequently at the trial of an accused person cause a conflict of evidence, a third doctor also be permitted to attend.

Motor Car Badge for Members.

It was suggested by one of our members that the Branch should adopt a badge for use on members' motor cars, similar to that used by the members of the New South Wales Branch. This matter is at present under consideration and inquiries have been made from the New South Wales Branch and the National Roads and Motorists' Association, New South Wales. In the event of such a badge being adopted, it will, of course, be necessary to obtain the cooperation of the traffic department.

Aerial Medical Officer, Australian Inland Mission.

In May last, Dr. K. St. Vincent Welch, the first aerial medical officer to be appointed by the Australian Inland Mission in Queensland, passed through Brisbane on his way to take up his duties. The President and some of the members of the Council had an interview with him, with a view to securing harmonious relations between the Association and the Australian Inland Mission with regard to the new medical service. The Branch should be grateful for the ready manner in which both the Reverend John Flynn and Dr. Welch have met us in this matter.

Mental Defectives.

A deputation seeking improved legislation with regard to the treatment of mental defectives, waited upon the Attorney-General on August 13, at which the Branch was represented by Professor J. P. Lawson and Dr. John Bostock. The great need for an intermediate mental hospital in Queensland was brought forward at the deputation.

Massage Training Facilities.

Dr. A. V. Meehan represented the Branch at a conference which was held on September 18 to consider the proposed facilities for massage training in Queensland. At that conference it was decided that a recommendation be sent to the Senate of the University that a joint board of massage studies be constituted comprising representatives from the University, the Brisbane and South Coast Hospitals Board, the *Mater Misericordiæ* Public Hospital, the Australasian Massage Association, the Queensland Branch of the British Medical Association and the Nurses' and Masseurs' Registration Board. The object of this body will be to draw up a course of massage and electrotherapeutics, hold examinations and give some form of diploma and to recommend successful candidates for registration by the newly constituted Nurses' and Masseurs' Registration Board.

Queensland Medical Board—Fee for Registration.

In view of the fact that the initial fee for registration for a medical practitioner in Queensland is £5 5s., it was decided to communicate with the Board and recommend that a temporary registration fee be provided for in connexion with medical men who may be doing locum tenency work in the State. It was pointed out that the high registration fee is likely to have two effects, namely: (i) It will be very difficult for medical men to obtain a *locum tenens*; (ii) there is a possibility that medical men from other States will not register when they are here for only two or three weeks. It was suggested that the temporary fee should last for a period of three months.

The Board, however, could not see its way to acting on this suggestion.

The College of Surgeons of Australasia.

Under the auspices of the College of Surgeons of Australasia, Mr. H. B. Devine delivered a lecture at the Geology Theatre of the University on Thursday, August 2, to which an invitation was extended to members of the Branch. The subject of the lecture was "Difficult Appendix."

Queensland Cancer Campaign.

The effort in connexion with the Queensland Cancer Campaign Fund resulted in nearly £50,000 being subscribed.

Building Fund Statement of Receipts and Payments for Period from March, 1928, to November 15, 1928.

RECEIPTS.

November 15, 1928.	£	s.	d.	£	s.	d.
To Loans from Members for period of 15 years expiring May 15, 1943, carrying interest at 7% *per annum*, payable on May 15 in each year—						
Amounts received from 33 Members	3,375	0	0			
Loans from 23 Members in exchange for the transfer to the Association of 3,250 shares paid to 10s. each in the Queensland Medical Land Investment Co., Ltd.—these loans to carry interest at 6% *per annum*, from November 25, 1927, to date of transfer of shares, thereafter at 7% *per annum*	1,625	0	0			
				5,000	0	0
„ Rents from "Bayview," Wickham Terrace				295	9	6
„ Refund by tenant of proportion of rates, "Bayview"				32	16	6
				£5,328	6	0

PAYMENTS.

November 15, 1928.	£	s.	d.
By amounts paid on account of purchase of "Bayview," Wickham Terrace	2,625	0	0
„ Expenses *re* purchase of property (Stamp Duties, Legal Costs *et cetera*)	87	4	0
„ Purchase of Shares in Queensland Medical Land Investment Company, Limited— 3,250 Shares of £1 each, paid to 10s. each in above Company, taken over from various members	1,625	0	0
„ Stamp Duty on Transfer of Q.M.L.I. Co., Ltd. Shares	3	13	6
„ Rates, Insurance and Repairs, "Bayview"	235	18	6
„ Interest on purchase of "Bayview"	107	13	9
„ Commonwealth Bank of Australia— Credit Balance Savings Bank A/c No. S.1879	643	16	3
	£5,328	6	0

A supply of radium has been obtained and at the request of the Brisbane and South Coast Hospitals Board, a representative of the Council attended a conference which was held on July 23 with regard to an agreement entered into with the Commonwealth Department for the loan of radium for use in the treatment of persons suffering from cancer. Dr. Alex. Murphy represented the Council at this conference and submitted a report. It was agreed at this conference that the committee of advice *re* suitability of patients and competency of medical practitioners to administer treatment, should be appointed by the Hospital Advisory Board, the Queensland Branch of the British Medical Association, the Senate of the University and the Cancer Campaign Committee.

Conclusion.

It will be noted from the report that the year has been a very strenuous one, many matters of importance having been dealt with.

Election of Office Bearers.

The President announced the result of the election of office bearers and members of the Council.

President: Dr. Mervyn S. Patterson.

President-Elect: Dr. S. F. McDonald.

Past-President: Dr. Eustace Russell.

Honorary Secretary: Dr. B. L. W. Clarke,

Representatives on the Federal Committee: Dr. D. Gifford Croll, Dr. E. S. Meyers.

Members of the Council: Dr. D. Gifford Croll, Dr. H. V. Foxton, Dr. E. S. Jackson, Dr. C. M. Lilley, Dr. W. N. Markwell, Dr. E. S. Meyers, Dr. F. A. H. Michôd, Dr. A. P. Murphy, Dr. A. T. H. Nisbet, Dr. J. L. Nye, Dr. W. N. Robertson, Dr. M. Graham Sutton, Dr. Neville G. Sutton, Dr. D. E. Trumpy.

On the motion of Dr. F. A. H. Michôd, seconded by Dr. E. S. Meyers, Mr. Roy G. Groom was appointed auditor on the same terms and conditions as in 1928.

Presentation to Dr. E. S. Meyers.

DR. EUSTACE RUSSELL made a presentation to Dr. E. S. Meyers on the occasion of his retirement from the position of Honorary Secretary. He eulogized Dr. Meyers's aptitude, diligence and wonderful courage and assured him of the appreciation of his colleagues.

DR. E. S. MEYERS thanked the President and the members of the Branch for the gift and said that what he had done, had been in the firm conviction that it was the best thing for the Branch.

President's Address.

Before vacating the chair Dr. Eustace Russell read an address (see page 804).

Induction of President.

Dr. Russell then introduced Dr. Mervyn S. Patterson. He was, he stated, so well known to all the members that there was no need to deal in detail with his attributes and the qualities that fitted him for the important position he was about to occupy.

Dr. Patterson referred to the gratification he felt on being elected to the chair. He was the first country member who had been chosen. He moved a vote of thanks to the retiring members of the Committee. In this motion he made special mention of Dr. Eustace Russell and Dr. E. S. Meyers. He also wished to thank Mrs. Spooner, their indefatigable Secretary and her assistant Miss Milner. The vote of thanks was accorded by acclamation.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

Cottrell, Jack Dinham, M.B., B.S., 1928 (Univ. Sydney), Warrinella, Wentworth Falls.

MacMahon, Edward Gerard, M.B., Ch.M., 1926 (Univ. Sydney), Hampden, Hampden Avenue, Darling Point.

Todd, Geoffrey Sydney, M.B., Ch.M., 1925 (Univ. Sydney), Lansdowne, Mann's Avenue, Neutral Bay.

Correspondence.

DENGUE AND THE HALDANES.

SIR: The numerous obituary notices in the lay press referring to the late Lord Haldane remind me of the fact that the two brothers mentioned were patients and friends of mine while here and Captain Haldane, the younger of the two, was the first person to call me professionally, when I ran up from Townsville "just to see what a goldfield was like." His name still stands first in my old visiting list and his kindly invitation and interesting febrile condition had much to do with my settlement in this ephemeral centre on March 1, 1885. Then it had a larger population than at present and was in the initial stage of gold production, ending with a total of £30,000,000; now it has ceased and turned to education instead. But to return to dengue: an influx of febrile cases of a similar type to the Captain's set me wondering whether my medical *confrères* were right in calling the disease typho-malaria, colonial and other colloquial names, which I need not say, were not to be seen in works on tropical diseases. The great number stricken down, amounting to 90% ultimately and the urgent demand for extra medical aid rendered departure inadvisable from a humane point of view, so I decided to stop with the prospect of finding out what the anomalous disease was. Within a week I arrived at the conclusion it must be a mild form of dengue, such as is rarely found in literature then or at the present time.

My previous visits to the great hospitals of tropical South America and residence for a year in Benin and Opobo rivers, where I acquired dangerous acquaintance with tropical diseases of all sorts, helped to confirm my opinion and render diagnosis comparatively easy and certain. For nine years after Townsville persisted in using the colloquialisms, but Dr. Hunter Finlay at once accepted my nomenclature and thereby was the first in Australasia to issue a death certificate, dated Charters Towers, June 16, 1885, for dengue. Although I have survived medical attendance of five generations in one family and dengue is one of the greatest industrial disturbers, as well as one of the most painful diseases, in four of six States, I have never had the slightest recognition of its discovery, unless from some of my old patients who remind me of my services during 1885 when the big epidemic of "dingo" was on. Probably the silence may be due to some friction with the editor and proprietor of the *Australasian Medical Gazette* over an advertisement which, if withdrawn as advised by the owner in Townsville, would have saved me a trip to that seaport and thereafter any prolonged residence in North Queensland. Being away from the great centres, where I vainly thought for years it must be known, I bothered little about it, but when Dr. Breinl, then of the Tropical Institute, Townsville, published his interesting lectures on the spread and distribution of diseases in the east, I was permitted through the medium of your journal to correct the statement that dengue was first known in Townsville and as recently as 1894. My letter appeared on page 212, volume II, 1915.

Captain Haldane, if alive, may therefore claim some association with the discovery of that alarming but rarely fatal disease and those nearer the great centres of literary collections might investigate the questions:

1. Whether the disease called *febris intermittens*, attacking 600 or more persons in Brisbane about 100 years ago, with a fatal issue of only four persons, was not dengue?

2. Whether the various epidemics of a mild type, among settlers and miners in the early days, were not of this type?

3. Whether the disease has not been in existence in aboriginal races for centuries and carried by them to us, rather than by mosquitoes overseas?

Yours etc.,

LEONARD REDMOND, M.D., M.Ch., R.U.I., L.S.A., Lond.

Charters Towers, Queensland,
October 8, 1928.

Books Received.

LISTER REDIVIVUS: AN ESSAY ON THE UNDUE PREVALENCE OF SEPSIS: by A. C. F. Halford, M.D., B.S. (Melbourne), M.D. (Queensland); 1928. Brisbane: Sapsford Brothers. Royal 8vo., pp. 110.

A REPORT ON THE LEAGUE OF NATIONS INTERCHANGE OF HEALTH OFFICERS IN INDIA, by A. L. Hoops, M.D., D.P.H., B.A.; 1928. London: John Bale, Sons and Danielsson, Limited. Demy 8vo., pp. 80. Price: 5s. net.

DISEASES OF THE BLOOD, by A. Piney, M.D., M.R.C.P.; 1928. London: J. and A. Churchill. Royal 8vo., pp. 202, with illustrations. Price: 12s. 6d. net.

ANNALS OF ROENTGENOLOGY: A SERIES OF MONOGRAPHIC ATLASES, Edited by James T. Case, M.D.; Volume VII: Urological Roentgenology, by Hugh H. Young, M.D., and Charles A. Waters, M.D.; 1928. New York: Paul B. Hoeber, Incorporated. Demy 4to., pp. 544. Price: $20.00 net.

ELEMENTARY PATHOLOGICAL HISTOLOGY, by W. G. Barnard; 1928. London: H. K. Lewis and Company, Limited. Crown 4to., pp. 80, with illustrations. Price: 7s. 6d. net.

THREE LECTURES ON NEUROBIOTAXIS AND OTHER SUBJECTS, DELIVERED AT THE UNIVERSITY OF COPENHAGEN, by C. U. Ariëns Kappers; 1928. London: William Heinemann (Medical Books), Limited. Royal 8vo., pp. 76, with illustrations. Price: 7s. 6d. net.

ENDURING PASSION, by Marie Carmichael Stopes; 1928. London: G. P. Putnam's Sons. Crown 8vo., pp. 230. Price: 6s. net.

PRACTICAL PHYSIOLOGICAL CHEMISTRY, by Sidney W. Cole, M.A.; Eighth Edition; 1928. Cambridge: W. Heffer and Sons, Limited. Demy 8vo., pp. 481. Price: 16s. net.

CRITERIA FOR THE CLASSIFICATION AND DIAGNOSIS OF HEART DISEASE, by a Committee comprising: Joseph H. Bainton, M.D., Robert L. Levy, M.D., W. C. Munly, M.D., M.C., and Harold E. B. Pardee, M.D.; 1928. New York: Paul B. Hoeber, Incorporated. Crown 8vo., pp. 102. Price: $1.50 net.

RÖNTGENOLOGY: THE BORDERLANDS OF THE NORMAL AND EARLY PATHOLOGICAL IN THE SKIAGRAM, by Alban Köhler, Prof. Dr. Med., Wiesbaden; rendered into English from the Fifth German Edition by Arthur Turnbull, M.A., B.Sc., M.B., Ch.B. (Glasg.). London: Baillière, Tindall and Cox. Crown 8vo., pp. 574, with illustrations. Price: 42s. net.

AN ESSAY ON THE UNDUE PREVALENCE OF SEPSIS. By A. C. F. Halford, M.D., B.S. (Melb.), M.D. (Qld.); 1928. Brisbane: Sapsford Bros.; Brisbane: Edwards Dunlop and Company, Limited. Royal 8vo., pp. 110.

PHYSICS FOR MEDICAL STUDENTS, by Sidney Russ, D.Sc. (London), F.Inst.P.; 1928. Edinburgh: E. & S. Livingstone. Demy 8vo., pp. 236. Price: 10s. 6d. net.

Diary for the Month.

JANUARY 3.—South Australian Branch, B.M.A.: Council.
JANUARY 8.—New South Wales Branch, B.M.A.: Council (Quarterly).
JANUARY 15.—New South Wales Branch, B.M.A.: Ethics Committee.
JANUARY 17.—New South Wales Branch, B.M.A.: Meeting of the Section for the Study of Cancer.
JANUARY 22.—New South Wales Branch, B.M.A.: Organization and Science Committee.
JANUARY 22.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JANUARY 29.—New South Wales Branch, B.M.A.: Medical Politics Committee.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xvi.

NEWCASTLE HOSPITAL, NEW SOUTH WALES: Medical Superintendent.

THE UNIVERSITY OF ADELAIDE: Junior Research Fellowship.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Contract Practice Appointments in South Australia. Booleroo Centre Medical Club.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Medical practitioners are requested not to apply for appointments to position at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, Sydney. (Telephones: MW 2651-2.)

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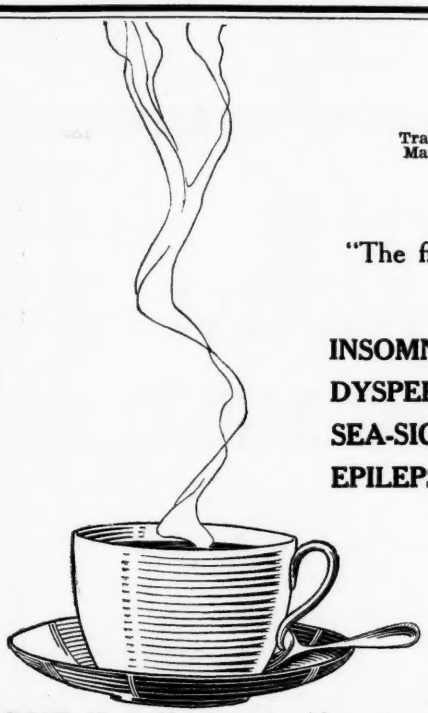

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